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THESIS

ANALYSIS OF A PROPOSAL TO
CONSOLIDATE AIRCRAFT INTERMEDIATE
MAINTENANCE CAPABILITIES

by

James William Wirwille, Jr.
and
William Thomas Ainsworth

December, 1991

Thesis Advisor: Thomas P. Moore

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ABSTRACT (continue on reverse if necessary and identify by block number)

IIS THESIS ANALYZES THE POTENTIAL FOR CONSOLIDATING DUPLICATE MAINTENANCE CAPABILITIES OF NAVY IRCRAFT INTERMEDIATE MAINTENANCE DEPARTMENTS (AIMDs) LOCATED IN THE SAME GEOGRAPHICAL AREA. THE KPECTED BENEFITS AND DRAWBACKS OF CONSOLIDATION ARE EXAMINED. THE BENEFITS DISCUSSED INCLUDE ANPOWER REDUCTION, SUPPORT EQUIPMENT REDUCTION, INVENTORY REDUCTION, AND INCREASED PRODUCTIVITY. THE RAWBACKS DISCUSSED INCLUDE INCREASED TRANSPORTATION COSTS, FACILITIES MODIFICATION COSTS, IMPACTS TO USTOMER SERVICE, ADDITIONAL MAINTENANCE MANAGEMENT AND ADMINISTRATIVE RESPONSIBILITIES, AND REDUCED ILITARY RESILIENCY. THE THESIS DISCUSSES OPTIONS REGARDING THE ORGANIZATIONAL AND SERVICE LEVELS ONSOLIDATED, CANDIDATES FOR CONSOLIDATION, LOCATIONS OF CONSOLIDATED REPAIR CAPABILITIES, AND ANAGEMENT OF CONSOLIDATED ITEMS. THE THESIS ALSO ANALYZES THE COMMONALITY IN MANNING, AUTOMATIC TEST QUIPMENT, AND SPECIFIC COMPONENT REPAIR CAPABILITIES OF THE TWO AIMDs LOCATED IN SAN DIEGO, CALIFORNIA: AVAL AIR STATION NORTH ISLAND AIMD AND NAVAL AIR STATION MIRAMAR AIMD

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Analysis of a Proposal to Consolidate Aircraft Intermediate Maintenance Capabilities

by

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Submitted in partial fulfillment
of the requirements for the degree of

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ABSTRACT

This thesis analyzes the potential for consolidating duplicate maintenance capabilities of Navy Aircraft Intermediate Maintenance Departments (AIMDs) located in the same geographical area. The expected benefits and drawbacks of consolidation are examined. The benefits discussed include manpower reduction, support equipment reduction, inventory reduction, and increased productivity. The drawbacks discussed include increased transportation costs, facilities modification costs, impacts on customer service, additional maintenance management and administrative responsibilities, and reduced military resiliency. The thesis discusses options regarding the organizational and service levels consolidated, candidates for consolidation, locations of consolidated repair capabilities, and management of consolidated items. The thesis also analyzes the commonality in manning, automatic test equipment, and specific component repair capabilities of the two AIMDs located in San Diego, California: Naval Air Station North Island AIMD and Naval Air Station Miramar AIMD.

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I. INTRODUCTION

As with all the military services, the Navy is facing cutbacks in funding, manpower, and equipment as a result of planned reductions in defense spending. The New York Times reported that General Colin L. Powell, Chairman of the Joint Chiefs of Staff, told the commission on military base closures that "consolidation is needed to make the best use of shrinking resources in post-Cold War society."[Ref. 1: p. 1] Similarly, Captain John P. Hall, Director of Maintenance Policy (AIR-411) for the Naval Air Systems Command, has acknowledged the need for the Navy to develop concepts and procedures that will allow the Navy to continue to support fleet readiness with fewer resources in today's environment of "down-sizing."[1]

The authors of this thesis believe that it may be possible for the Navy to decrease aircraft maintenance expenditures and maintain operational readiness by consolidating some of the duplicate maintenance capabilities found in Aircraft Intermediate Maintenance Departments located in the same geographic area. Most Naval Air Stations (NAS) have an Aircraft Intermediate Maintenance Department (AIMD) to provide

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[1] Taken from the minutes of the Prime Intermediate Maintenance Activity meeting held January 8-9, 1991 at the Naval Aviation Maintenance Office.

intermediate level maintenance support for the aircraft based at the air station. There are several metropolitan areas in the continental United States with more than one AIMD. NAS North Island AIMD and NAS Miramar AIMD are located 25 miles from each other in San Diego; NAS Moffett Field AIMD and NAS Alameda AIMD are located 30 miles from each other in the San Francisco Bay area; NAS Mayport AIMD, NAS Cecil Field AIMD, and NAS Jacksonville AIMD are all located in the Jacksonville, Florida area; and NAS Norfolk and NAS Oceana are both located in Norfolk, Virginia. Although there are some differences between these closely located AIMDs due to the different types of aircraft based at each site, all of these AIMDs perform the same basic intermediate maintenance functions involving airframes, powerplants, avionics, armament equipment, survival equipment, and support equipment.

This thesis analyzes the expected benefits of consolidation and specifically examines possibilities for partially consolidating the capabilities of the AIMDs located at NAS North Island and NAS Miramar. Currently, both NAS North Island and NAS Miramar operate fully independent AIMDs, with each AIMD being responsible for providing intermediate level support for the aircraft squadrons based at their air station.[2] NAS North Island AIMD supports C-2, S-3, H-2, H-3,

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[2]North Island does send some C-2 aircraft components to Miramar AIMD for repair due to the similarities between the C-2 and the E-2 aircraft operating from NAS Miramar.

H-46, and H-60 aircraft. NAS Miramar AIMD supports E-2 and F-14 aircraft. Additionally, each AIMD provides support to West Coast-based aircraft carriers through "Repair and Return" actions.[3] Figure 1 shows the chain of command for each air station.

Although North Island AIMD and Miramar AIMD support different types of aircraft, they both possess the broad areas of capability discussed in the previous paragraph, as well as specific areas of commonality discussed later in the thesis. Consolidating all or some of the duplicate maintenance capabilities of the two AIMDs can reduce the manpower, equipment, and inventory required to provide intermediate maintenance for aircraft operating from NAS North Island and NAS Miramar.

The authors acknowledge that there are several alternatives for consolidating AIMDs, such as two-level maintenance and total consolidation, but have limited the scope of this thesis to analysis of the potential for partial consolidation. Chapter II gives an overview of the Naval Aviation Maintenance Program. Chapter III then discusses AIMD organization, function, and capabilities, as well as

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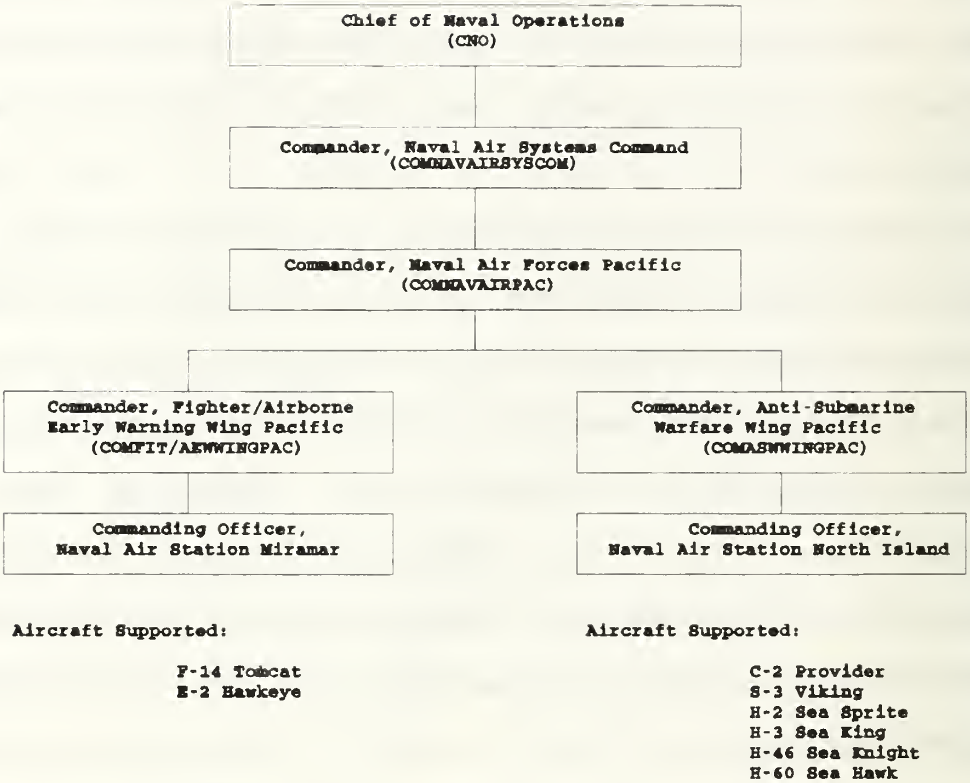
[3]Repair and return is an aircraft carrier support program under the authority of Commander, Naval Air Forces Pacific. Carriers (CVs) are allowed to send components to shore AIMDs for repair. North Island AIMD receives components from aircraft based at NAS North Island and Miramar AIMD receives components from aircraft based at NAS Miramar. Repair and return is normally used only before and after a major deployment.



NAS North Island and NAS Miramar Chain of Command

Figure 1

describing the AIMD repair cycle. Chapter IV examines the expected benefits of consolidation, and Chapter V discusses options for partial consolidation. Chapter VI then analyzes the commonality between the AIMDs of NAS North Island and NAS Miramar. Chapter VII provides conclusions and recommendations.

II. OVERVIEW OF THE NAVAL AVIATION MAINTENANCE PROGRAM

A. NAVY AIRCRAFT MAINTENANCE PHILOSOPHY

Navy aeronautical maintenance, guidance, doctrine and objectives are explained in OPNAV Instruction 4790, Naval Aviation Maintenance Program (NAMP). The NAMP clearly states in the opening paragraph that "..the objective of the Naval Aviation Maintenance Program is to achieve and continually improve aviation material readiness,..., with optimal use of material, manpower and funds."[Ref. 2: p. 2-1] A primary NAMP philosophy is the repair of aeronautical equipment at the maintenance level which ensures optimal economic use of resources. The intent of the NAMP is to establish a program of "performance improvement" through teamwork, communication, and efficient use of resources focused to meet the needs of the customer [Ref. 2: p. 3-1]. The consolidation of common intermediate level maintenance support capabilities within a geographic area can positively support these objectives.

B. MAINTENANCE CONCEPTS AND LEVELS

A maintenance concept describes the overall system support environment and forms the baseline for determining specific logistics support requirements for equipment and systems. In general, a maintenance concept provides: the basis for supportability requirements in system design; the total

logistics support requirements and a basis for the maintenance plan; and leads to the identification of maintenance tasks, task frequencies, personnel skill levels, test and support equipment, spare and repair parts, facilities and other resources required to maintain the system [Ref. 3: pp. 104-105]. The Navy's aeronautical maintenance concept is defined in the Naval Aviation Maintenance Program Instruction, OPNAV Instruction 4790.2E.

The Naval Aviation Maintenance Program divides naval aeronautical maintenance into three very distinct levels, each joined through a common thread: supply. The three levels of aeronautical repair are the organizational level, intermediate level, and depot level. The Navy chose the three-level aircraft maintenance concept seeking the following advantages: reduced total costs; improved operational readiness; increased supply responsiveness; and improved mobilization, deployability and sustainability [Ref. 2: p. 2-1]. The three levels of maintenance are described in the following sections.

1. Organizational Maintenance

Organizational level (O-level) aircraft maintenance directly supports squadron operations, where the combined efforts of squadron maintenance personnel and supply support are transformed into full mission and mission capable aircraft. O-level maintenance forms the base (bottom level/tier) for the three-level maintenance concept, and

creates the demand for intermediate and depot levels of repair. The organizational repair level is often thought of as the lowest and simplest level of aeronautical maintenance.

O-level maintenance is the responsibility of the using activity, and consists of the completion of daily maintenance tasks by squadron maintenance personnel in support of squadron operations. O-level maintenance functions include inspecting, servicing, removing and replacing defective components, on-equipment corrective and preventive maintenance, performing technical directives, and administrative record keeping and reporting.[Ref. 2: p. 3-1]

2. Intermediate Maintenance

Intermediate level (I-level) maintenance represents the middle tier in the three-tier maintenance system. I-level maintenance provides both direct and indirect support for the squadron organizational maintenance effort. Maintenance at the I-level consists of calibration, repair or replacement of damaged or unserviceable parts, components, or assemblies; the manufacture of parts not available through the supply system; and the provision of technical assistance to using organizations. I-level maintenance support for Navy aircraft operations is performed by Aircraft Intermediate Maintenance Departments (AIMDs) ashore and afloat. AIMDs are the focus of this thesis, and are discussed in greater detail in Chapter III.

3. Depot Maintenance

Depot level maintenance (D-level) is the highest level of repair in the NAMP, and is performed at Naval Aviation Depots (NADEP) and on-site by NADEP field teams. NADEPs accomplish both in-depth on-equipment and off-equipment repair and modifications. Maintenance at this level consists of major rework or complete rebuilding of parts, assemblies, subassemblies, and end items, including the manufacture, modification, testing, and reclamation of parts as required [Ref 4: p. 3-2]. D-level maintenance also supports the lower levels of maintenance by providing technical and engineering assistance, and advanced technical training to maintenance technicians at the lower levels.

Navy depot level maintenance is currently being consolidated in an effort to streamline maintenance and optimize resources in accordance with the directions of Defense Management Report Decision DMRD-908. The consolidation plan includes elimination of duplication of depot level repair for the entire United States, and a competitive bid process to improve cost accounting and increase competition. The competition for maintenance/rework projects is open to all NADEPs and private industry. NADEPs will no longer have a guaranteed workload. If they are to remain open, they will have to compete on an equal basis with government and private industry.

4. Supply Support

All aeronautical maintenance activities, no matter how small, are assigned a supply activity to which material requests can be submitted and/or Ready for Issue (RFI) equipment can be processed and returned to the supply system or using activity. Supply support for the three-tier maintenance system is dependent on the integration and coordination between the three levels of maintenance and supply. This symbiotic relationship is crucial for the successful support of Naval Aviation. The loss of one element will adversely affect the remaining elements. The degree of success in coordinating the two complex elements, supply and maintenance, is measured by naval aviation readiness and the efficiency of resource management.

III. AIRCRAFT INTERMEDIATE MAINTENANCE DEPARTMENTS

A. FUNCTION

AIMDs provide intermediate-level maintenance support for squadron operations. AIMDs provide direct support to squadrons through actions and functions that deal directly with squadron-owned equipment or operations. An example of the AIMD's direct support for squadron-owned equipment is work done on parts and equipment the squadron sends to the AIMD for a specific maintenance action, such as staking a bearing or performing an I-level preventive maintenance action or inspection. Other examples of direct equipment support are the Non-Destructive Inspections (NDI) the AIMD performs on squadron aircraft, calibration services for squadron-owned support equipment, and test and check of aircraft components for fault troubleshooting. An example of the AIMD providing direct support to squadron operations are the AIMD's Support Equipment (SE) Pool and Individual Material Readiness Listing (IMRL) items Pool from which squadrons draw support equipment needed in the conduct of daily O-level operations and maintenance.

The majority of the AIMD effort is directed towards providing indirect support to squadrons by repairing non-Ready

For Issue I-level repairable aircraft parts and equipment.[4] The majority of the items the AIMD repairs are placed in the air station Supply Department's inventory, from which squadrons draw replacements for I-level repairable items.

B. LOCATIONS

As stated in Chapter II, intermediate level aeronautical repair and support is accomplished at AIMDs both ashore and afloat. Aircraft carriers have AIMDs to support shipboard aircraft operations, and naval air stations located throughout the continental United States and the world have AIMDs to provide I-level support for aircraft operating from shore sites. Figure 2 is a map showing the locations of the major AIMDs in the continental United States.[5]

There are four metropolitan areas within the continental U.S. with more than one AIMD located in close proximity to each other: Norfolk, Virginia; Jacksonville, Florida; San Francisco, California; and San Diego, California[6].

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[4]Ready For Issue/Installation parts and equipment are items fully functional for their intended use. Non-RFI items are not RFI because of malfunction, or because they require test, inspection, servicing, or other maintenance before use.

[5]In addition to the AIMDs shown on Figure 2, there are Reserve AIMDs located in: Atlanta, Georgia; Chicago, Illinois; Dallas, Texas; New Orleans, Louisiana; and Willow Grove, Pennsylvania.

[6]One of the two AIMDs in the San Francisco, California area, NAS Moffett Field, is presently scheduled for closure.

Locations of AIMDs in the Continental United States

Figure 2

Table 1 lists the AIMDs that are located in close proximity to each other and the primary types of aircraft they support. These are the AIMDs considered by the authors to be candidates for consolidation.

C. ORGANIZATION, MANNING, AND TRAINING

In accordance with the NAMP, shore AIMDs have been organized and structured the same way regardless of the number or types of aircraft supported. Such standardization ensures effective management within a framework of defined authority, responsibility and function. Standardization also establishes

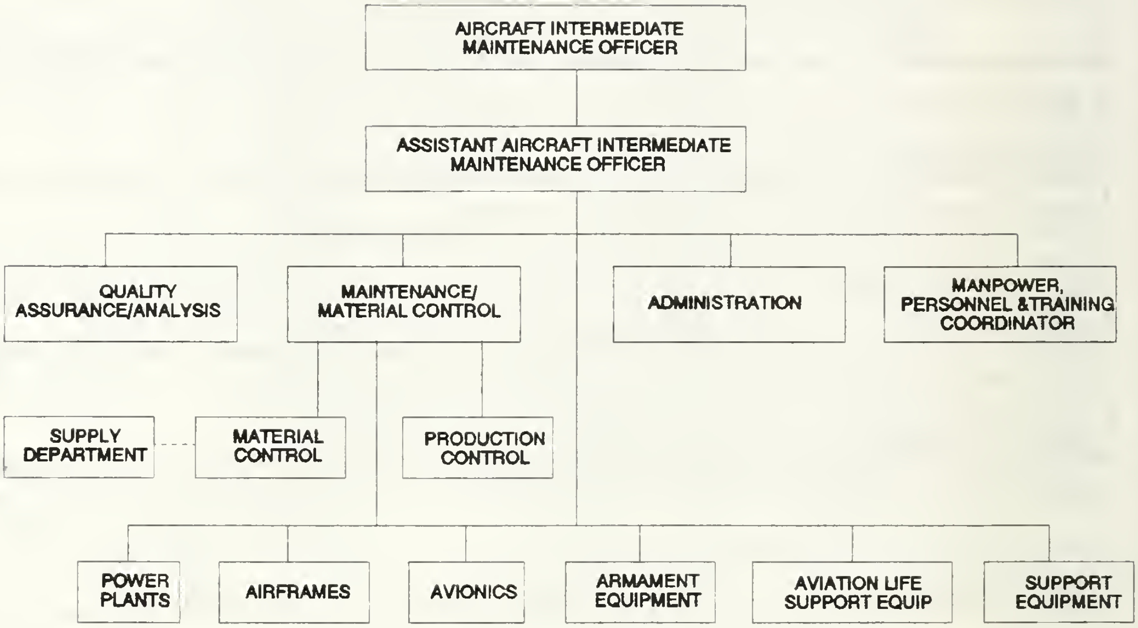
Table 1: **METROPOLITAN AREAS WITH MORE THAN ONE AIMD**

AIMD	Metropolitan Area	Aircraft Supported
NAS Norfolk	Norfolk, Virginia	E-2C, H-46, H-53
NAS Oceana	Norfolk, Virginia	A-6E and F-14C
NAS Jacksonville	Jacksonville, Fl	P-3C, H-60F, H-3
NAS Cecil Field	Jacksonville, Fl	F/A-18, S-3
NAS Mayport	Jacksonville, Fl	H-2 and H-60B
NAS Moffett Field	San Francisco, Ca	P-3C
NAS Alameda	San Francisco, Ca	H-53
NAS North Island	San Diego, Ca	S-3, C-2, H-2, H-3, H-46, H-60B, H-60F
NAS Miramar	San Diego, Ca	F-14C, E-2C

mutually-supportive relationships between the AIMD, supply activities, and supported activities, with the goal being to improve performance, economy of operation, optimal use of available resources and quality of work.[Ref 4: p. 3-1]

1. Organization.

The AIMD organizational structure incorporates a hierarchical span of control with specific alignment of functions and division of work. The standard organization structure presented in Figure 3 illustrates the hierarchical relationships between AIMD management, staff and production divisions [Ref 4: p. 3-3]. As depicted, Figure 3 shows the upper management positions of Aircraft Intermediate



Shorebased AIMD Organizational Structure

Figure 3

Maintenance Officer and Assistant Aircraft Intermediate Maintenance Officer; the staff functions of Quality Assurance/Analysis, Maintenance/Material Control, Administration, and Manpower, Personnel and Training, and identifies the production divisions. Figure 3 also illustrates the close relationship between maintenance and supply by showing Maintenance/Material Control as the link between the Supply Department and the Production Divisions.

There is basic commonality in the types of maintenance performed at all AIMDs. The weapons systems supported may

differ, but the general types of intermediate level maintenance capabilities do not. This latter commonality is reflected by the standardization of AIMD production divisions: Production Control, Quality Assurance, Power Plants, Air Frames, Avionics, Aviation Life Support, Armament Equipment and Support Equipment. The following sections give brief discussions of each division's basic maintenance capabilities and responsibilities.

a. Production Control.

Each AIMD has a production control staff (organizational code 020) to support, coordinate and control the maintenance effort. Production Control acts as the main interface between the supported activities and the work centers, and is also the interface between the AIMD and the air station's Supply Department.

b. Quality Assurance Division.

The Quality Assurance Division (organizational code 030) consists of a small group of highly skilled maintenance technicians and aviation administrative personnel. The overall objective of Quality Assurance is to prevent product defects through process monitoring and inspection [Ref 4: p. 7-3]. In addition to inspection, the Quality Assurance (QA) Division is responsible for gathering, analyzing and maintaining information on the quality characteristics of products, and the source and nature of defects. This

information forms a historical database available for decision making and identifying problem areas. Quality Assurance also maintains the Central Technical Publications Library (CTPL), which serves as the source for current technical information used for repairs and training. The QA Data Analyst is responsible for providing quantitative and qualitative analytical information to maintenance managers. The Data Analyst also collects and screens for accuracy all Maintenance Data System (MDS) source documents.

c. Power Plants Division.

The Power Plants Division (organizational code 400) is tasked with repairing and inspecting aircraft engines, auxiliary power units (APU), and engine accessories and components. The Power Plants Division is also responsible for maintaining and operating engine test facilities. AIMDs are assigned a specific level of support for specific engines. This assignment is based primarily on the type and number of engines to be supported both on the individual air station and within the geographical area.[Ref. 4: p. 11-1]

d. Airframes Division.

The Airframes Division (organizational code 500) consists of several interrelated work centers, each providing a different type of aircraft structural repair or maintenance. Commonly, the Airframes Division will have the following work centers: Structures; Hydraulic/Pneumatic; Brakes; Tire/Wheel;

Nondestructive Inspection; Paint; and a Machine Shop. The Structural Repair Shop is responsible for sheet metal fabrication, aircraft structural repair and component corrosion prevention and treatment. The Hydraulic/Pneumatic Shop repairs hydraulic components and equipment (i.e., pumps, valves, accumulators and struts), and fabricates hydraulic and pneumatic hose and tubing assemblies. The Brake Shop is responsible for repairing aircraft brakes. The Tire and Wheel Shop assembles aircraft tire and wheel assemblies. Non-destructive Inspection (NDI) evaluates parts for excessive wear or defects without affecting their future use. The Machine Shop manufactures parts which are not available through the supply system or commercial sources.

e. Avionics Division.

The Avionics Division (organizational code 600) is comprised of numerous work centers, and is typically the largest division in the AIMD. Avionics Division is responsible for repairing aircraft communications, navigation, computer, electrical, radar, sonar, weapons control systems, and other aircraft electronic systems. Additionally, the Avionics Division operates a Precision Measuring Equipment (PME) Calibration Branch, which calibrates and repairs test and measuring equipment.

f. Armament Division.

The Armament Division (organizational code 700) maintains and repairs aircraft weapons delivery systems, such as guns, rocket launchers and bomb racks. Maintenance includes an active corrosion treatment and prevention program, performing periodic inspection, and preserving and storing weapons.

g. Aviation Life Support Systems Division.

The Aviation Life Support Systems (ALSS) Division (organizational code 800) maintains aircrew personal survival and life support equipment, and aircraft egress systems. ALSS include oxygen systems, escape systems, fire extinguishing systems, aircrew clothing, survival kits, parachutes and associated hardware, and flotation devices. ALSS maintenance includes equipment repair, treatment and prevention of corrosion, and periodic inspections.[Ref. 4: p. 11-70]

h. Support Equipment Division.

The Support Equipment Division (organizational code 900) is responsible for maintenance and inventory control of non-avionic support equipment primarily used by organizational activities. Support equipment can be divided into two broad categories: 1) Common Support Equipment (CSE), which is general purpose support equipment such as towing or mobile power equipment used on a variety of different aircraft types; and 2) Peculiar Support Equipment (PSE) specifically designed

and developed for a particular weapons system. The Support Equipment Division is also responsible for training and licensing personnel in the care and use of support equipment.

2. Manning and Training.

a. Manning.

Each AIMD is manned in accordance with the OPNAV 1000/2 Manpower Authorization (MPA). The MPA gives the composition (rates and billets) and quantity of personnel authorized for each naval activity. Each AIMD's Manpower Authorization is different, but there is a great deal of similarity in the basic requirements. Because each AIMD has capabilities (to some degree) to perform repairs/maintenance to power plants, airframes, avionics, armament equipment, survival equipment, and support equipment, all AIMDs are manned with maintenance technicians from the same basic skills rates: Aviation Machinist's Mate (AD), Aviation Electrician's Mate (AE); Aviation Structural Mechanic/Safety Equipment (AME); Aviation Structural Mechanic/Hydraulics (AMH); Aviation Structural Mechanic/Structures (AMS); Aviation Ordnanceman (AO); and Aircrew Survival Equipmentman (PR). From these basic source ratings, AIMDs receive technicians with the specific training and skills required to provide I-level support for the types of aircraft that the AIMD supports.

The Navy Enlisted Classification (NEC) coding system supplements the enlisted rating structure by

identifying technicians with required skills and qualifications to fill each AIMD's Manpower Authorization. NECs are attained through the completion of various training requirements. The following is an overview of the Navy's I-level aviation maintenance training program.

b. Training.

Maintenance training is a vital element in naval aviation. The quality and availability of technical training determines the functional capabilities of operating forces and support activities. The Maintenance Training Program is designed to ensure basic, intermediate, and advanced levels of training for all maintenance personnel. Maintenance training is a continuous process that begins when personnel enter the service and progresses throughout each service member's tour of service with more advanced and specialized training.

The Navy's skills training program is a major factor in the commonality between AIMDs. Specialized skills are required to maintain, repair and operate present-day weapons systems and associated equipment. The majority of AIMD technicians receive initial training enroute to their first duty station.[7] This initial training is conducted at Class A School ("A" School), and provides the basic technical knowledge and skill to prepare an individual for entry level

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[7]Some I-level personnel attain their basic skills rating through on-the-job training (OJT) and passing a rating examination.

performance on the job and for additional specialized training. Specialized training to qualify personnel for specific maintenance tasks is attained through Class C schools ("C" School), Practical Job Training (PJT), the Maintenance Training Improvement Program (MTIP), formal instruction at local Fleet Readiness Aviation Personnel Departments (FRAMPs), Naval Aviation Training Group Detachments (NAMTRAGRUDETs), Fleet Aviation Specialized Training Groups (FASOTRGRUs), Naval Aviation Depots (NADEPs), and factory training.

Some training qualifies technicians for a Navy Enlisted Classification (NEC), which is a code to identify personnel qualified in specific areas/tasks. NAVPERS Manual 18068, Volume II lists all NECs and qualification requirements. Since NECs identify skills associated with specific maintenance tasks, they are an excellent means for comparing the commonality of AIMDs.

D. AIMD MAINTENANCE

As stated in Section A of this chapter, the majority of the AIMD effort is involved with repairing I-level repairable parts and equipment. Because the authors feel these repair capabilities offer the greatest opportunity for consolidation, this section will provide an overview of the AIMD repair cycle and discuss AIMD maintenance management, supply support, and funding.

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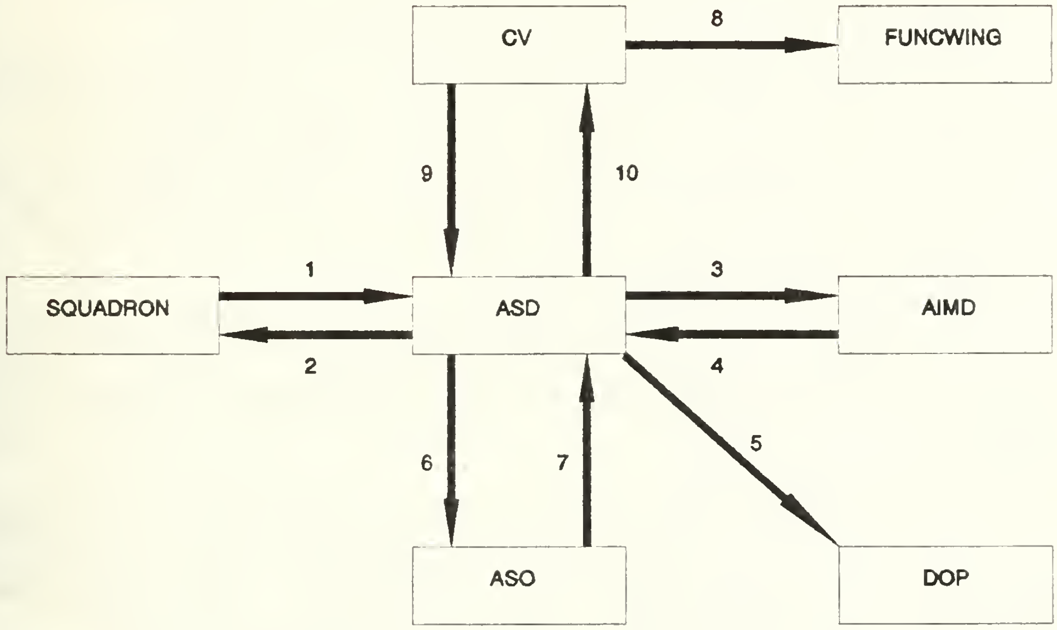
1. **The AIMD Repair Cycle.**

Naval Air Station Supply Departments (which will be referred to as simply "Supply") maintain an inventory of Ready For Issue (RFI) repairable aircraft equipment and parts in order to be able to quickly satisfy squadron demand for replacements of non-RFI items. Supply's inventory of repairable items is commonly referred to as the "rotable pool" or just the "pool." AIMD capabilities and productivity are crucial factors in maintaining the pool at a level sufficient to meet squadron demand. Figure 4 and the following discussion explains the basic procedures for processing non-RFI pool items.

(1) Squadron turns a non-RFI item into the Supply Department's Aviation Support Division (ASD) and orders a replacement part.

(2) ASD supplies replacement part from its pool, if available.

(3) ASD assigns a repair priority to the non-RFI part and passes the part to AIMD for repair. The highest priority for repair is Priority 1 (PRI 1), which is commonly referred to as Expeditious Repair, or "EXREP." The EXREP priority is assigned to the repair of components and equipment for which there is no replacement item available in the pool to give to the squadron. Priority 2 (PRI 2) is assigned to the repair of items for which the pool level has dropped below the specified "pool critical" level. For example, if the



AIMD Repair Cycle

Figure 4

inventory allowance for an item was ten and the specified pool critical level was four, once on-hand RFI inventory falls to four, all subsequent items inducted for repair would be inducted with PRI 2 assigned. If the pool inventory continued to fall to zero, all subsequent items would be inducted as EXREP. Priority 3 is assigned to the repair of items for which inventory is above the pool critical level.

(4) AIMD either repairs the defective part or declares it Beyond Capability of Maintenance (BCM), and passes it back

to ASD. If repaired, the part is either placed in the pool, or if EXREP, delivered directly to the squadron.

(5) ASD ships BCM'd parts to the Designated Overhaul Point (DOP), usually a Naval Aviation Depot (NADEP).

(6) ASD orders a replacement for the BCM'd part via the Aviation Supply Office (ASO).

(7) ASO charges the ASD/AIMD for repairing parts which belong to the Aviation Depot Level Repairable (AVDLR) Funds account.[8]

(8) Aircraft carrier (CV) requests repair and return disposition instructions from cognizant Functional Wing (FUNCWING) for defective components removed from FUNCWING aircraft.[9]

(9) If directed by the FUNCWING, CV forwards non-RFI components for repair and return action by the AIMD that supports the aircraft while operating ashore.

(10) Repaired parts are returned to the CV inventory. If a part is BCM, ASD will ship it to the Designated Overhaul Point (DOP) per CV instructions. CV orders a replacement part and is charged the AVDLR repair cost.

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[8]AVDLR was created to ensure Depots had funding to match their workload, and as an incentive to AIMDs to increase repair capabilities. When an AIMD BCM's a depot-level repairable item, it must provide a designated amount of AVDLR funds to ASO to fund the repair.

[9]As mentioned in Chapter I, NAS North Island and NAS Miramar provide support to West Coast based aircraft carriers through repair and return action.

2. Supply Support.

Supply is responsible for providing AIMDs with the material support required to perform intermediate level maintenance and repair. This includes materials to maintain AIMD equipment as well as the parts and consumables needed in the repair and maintenance of aircraft components and equipment. Some of the spare repair parts required by the AIMD are I-level repairable items themselves, and for these, supply replenishment actions follow the same basic pattern as described in Figure 4; the item is either provided from pool inventory or through EXREP repair action.

Air station AIMDs and Aviation Support Divisions (ASD) work hand-in-hand to provide support to tenant aircraft squadrons. The AIMD Maintenance/Material Control Officer and the ASD Officer are in constant communication regarding repair priorities and the expediting of needed repair parts. Additionally, the AIMD and the Supply Department share responsibility for the Aviation Depot Level Repairable (AVDLR) funds. Because the AIMD and ASD are mutually supportive of aircraft squadrons, the term Intermediate Maintenance Activity (IMA) is often used to describe the two activities as one.

3. Maintenance Management.

With few exceptions, AIMD maintenance managers primarily deal with non-RFI items originating from the aircraft based at the AIMD's air station. The workload is

processed in accordance with the regulations and procedures of the OPNAV Instruction 4790 Series and other miscellaneous directives.

Workload prioritization generally follows the guidelines discussed in Chapter II: Priority 1 (EXREP) first, followed by Priority 2 (Pool Critical), followed by Priority 3 items. However, inputs on readiness priorities from squadron, Functional Wing, and Type Commander authorities are particularly important and directly affect the scheduling of AIMD workload. Squadrons provide the AIMD with inputs regarding prioritization of particular squadron components in the AIMD repair cycle. Functional Wings provide the AIMD with guidance regarding the "pecking order" of squadrons, with squadrons preparing for deployment usually receiving priority over other squadrons. Type Commander input usually reflects readiness concerns of a larger scope, such as a problem with an entire aircraft type or conduct of a particular maintenance program. It is the squadron, Functional Wing, and Type Commander inputs that aid the AIMD in aligning its workload priorities with the priorities of its customers.

4. Funding.

The two major funding categories related to I-level repairables are: 1) Aviation Fleet Maintenance (AFM) funds; and 2) Aviation Depot Level Repairable (AVDLR) funds. AFM funds are used to purchase consumable repair parts, such as O-

rings, gaskets, and diodes. AVDLR funds are used to fund depot-level component repair and to purchase replacements for repairable items. Naval air stations get the funding to operate their Supply Departments and AIMDs from the AFM and AVDLR budgets supplied to Type Commanders, such as COMNAVAIRPAC. The Type Commanders get their AFM and AVDLR budgets based on the specific type/model/series aircraft they must support. Accordingly, Type Commanders distribute these funds to the air stations based on the type of aircraft supported at each site, and on planned operations tempo.[Ref. 5]

IV. EXPECTED BENEFITS OF CONSOLIDATION

The intent of consolidation is not to simply shift the responsibility for repair, but to shift the resources for repair as well. The objective of consolidation is reduce costs through more efficient use of resources without decreasing operational readiness. This chapter presents past research and quantitative analysis that support the assumption that consolidation of AIMD repair capabilities has the potential to: achieve cost savings through reductions in manpower, support equipment, and inventory; improve facilities utilization; and improve productivity.

Busch [Ref. 9] determined the potential for a nearly 50% reduction of Avionics Intermediate Shops (AIS) test sets used in F-16 intermediate level repairs, if repair capability were removed from individual sites and consolidated at a Central Intermediate Repair Facility (CIRF). Ballou [Ref. 10] found that consolidation can reduce safety stock inventory because of less uncertainty in demand. Hunt [Ref. 11] discusses improved technical proficiencies, concentrated production management, and contributions to improved reliability through consolidation of intermediate aircraft support in the Air Force. Smith [Ref. 15] and Jones [Ref. 16] state consolidation will improve the efficiency of service

facilities. Smith's and Jones' findings are supported by computer computation of a consolidation scenario.

In order to give the reader a point of reference while considering the analysis of the expected benefits of consolidation, a brief discussion of the authors' view of consolidation follows. As stated in Chapter I, the thesis concerns the potential for partial consolidation of duplicate capabilities of AIMDs located in the same geographical area. As discussed in greater detail in the next chapter, partial consolidation means that the AIMD organizational units considered for consolidation are individual divisions, branches, or work centers. Accordingly, differing levels of repair are considered candidates for consolidation, such as all avionics repair, or just communications equipment repair, or only receiver-transmitter repair, or even more specifically, the repair of a particular receiver-transmitter like the ARC-159 Transceiver. Also, consolidated repair capabilities could be established at only one of the AIMDs (single-siting), or each AIMD could be assigned specific consolidated repair responsibilities (multiple-siting).

1. Manpower Benefits.

a. Supervisory Manpower Reduction.

The potential for manpower savings at the supervisory level is evident. If one AIMD's operation is run with two shifts and two supervisors, and the other AIMD's

operation is run with three shifts and three supervisors, there are five supervisors between the two AIMDs. If this repair function were consolidated, it is not unreasonable to expect the consolidated operation to be run with no more than three shifts and three supervisors. The typical supervisor is at the E-6 paygrade. For Fiscal Year 1992 Military Personnel, Navy (MPN) appropriations, the Navy budgeted $39,430 for each person in the E-6 paygrade [Ref. 6]. A reduction from five to three E-6 supervisory personnel represents a potential annual savings of nearly $80,000 to the MPN appropriation. Table 2 lists FY 1992 MPN appropriation budgeted amounts for E-3 through E-9 enlisted personnel.

Table 2: **BUDGETED MILITARY PERSONNEL COST**

PAYGRADE	MPN BUDGET PER INDIVIDUAL
E-3	$22,738
E-4	$26,838
E-5	$32,643
E-6	$39,430
E-7	$46,599
E-8	$54,164
E-9	$64,143

b. Direct Labor Reduction.

There is also potential for manpower savings through greater efficiency in the use of direct labor. For

example, if the AIMDs at North Island and Miramar have ten-man shops and both are averaging a 90% manpower utilization rate (with leave, training, TAD, and sick time taken into account), as separate entities it would not be practical to reduce personnel because it would place them at 100% utilization with no excess capacity to meet periods of above average workload. If the shops were combined, their combined workload should also fall at the 90% utilization rate. Ten percent under utilization of a 20-man shop = two "excess" technicians. If one of these technician billets were cut, the combined shop would be at a 95% utilization rate and have a 5% "cushion" to handle above-average workloads.

c. Manpower Analysis and Billet Reduction.

It must be emphasized that accurate assessment of manpower utilization is crucial to realizing manpower savings. Regardless of the degree of consolidation, a manpower utilization analysis is needed in order to meet the manpower savings objective of consolidation. Manning requirements for the consolidated activity must be evaluated and excess personnel cut from manpower authorizations. There will be no manpower cost savings if the consolidated repair activity simply integrates all the personnel from the source AIMD into its operations.

The determination of billet requirements and the potential for manpower reduction is a joint effort between

several entities. The CINCPAC Management Analysis Team is responsible for conducting manpower efficiency reviews for Pacific Fleet activities. The team examines historical production data, reviews applicable production and administrative directives, and interviews personnel to determine manpower requirements and degree of utilization of present manpower assets [Ref. 7]. The Management Analysis team makes manpower recommendations, but the COMNAVAIRPAC Manpower Planning Department is actually responsible for managing AIMD billets. The Manpower Planning Department will solicit the inputs of maintenance experts before implementing manpower reductions or additions [Ref. 8].

d. Simplified Manpower Management.

Manpower management responsibilities include: interacting with the Enlisted Personnel Management Activity (EPMAC) to obtain personnel of the proper rate, rank, and NEC to fill manpower allowances; arranging formal in-rate training to obtain and maintain qualifications; and numerous administrative functions, such as performance evaluation and career counseling. These responsibilities will not be eliminated by consolidation, but consolidation can decrease the number of different types of technicians managed at each AIMD, which will simplify NEC and training management.

e. Training.

Training benefits could be substantial when the repair of entire functions or families of parts is consolidated. Technicians at a consolidated maintenance site would be exposed to components from all the different aircraft types serviced by the consolidated site, rather than just the components peculiar to the aircraft serviced by an individual AIMD. Cross-training increases a technician's capabilities, which is especially beneficial for aircraft carrier (CV) operations. CV AIMDs are tasked with supporting many different types of aircraft from several functional wings. The broader the base of its technician's experience, the easier it is for the CV AIMD to service the embarked airwing.

Tire and wheel build-up is an example of a function of similar commonality between the AIMDs at North Island and Miramar in which cross-training would be beneficial to carrier operations. Tire and wheel build-up is taught via on the job training (OJT). North Island and Miramar both operate Tire and Wheel Build-up work centers, and both AIMDs provide qualified SEAOPDET personnel in support of carrier air wing operations[10]. North Island SEAOPDET technicians are trained

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[10]Sea Operations Detachment (SEAOPDET) personnel are I-level technicians on sea duty, but assigned to shore AIMDs rather than to carrier AIMDs. The shore AIMDs are responsible for training the SEAOPDET personnel in I-level support for the type of aircraft based at the shore AIMD's air station. When aircraft deploy onboard the aircraft carrier, the AIMD temporarily transfers SEAOPDET personnel to the carrier AIMD to provide support.

in the repair of H-3, H-60, C-2, and S-3 tires and wheels (among other non-carrier based types) and Miramar SEAOPDET technicians are exposed to F-14 and E-2 assemblies. At sea, both groups of technicians work in the same shop. Consolidating tire and wheel build-up would facilitate cross-training on shore and thus provide more extensively trained technicians at sea.

2. **Support Equipment Reduction.**

The greatest potential for support equipment (SE) reduction lies in increasing utilization. (To simplify the writing, this section will refer to all common and special purpose hand tools, test fixtures, Automated Test Equipment (ATE), Test Bench Installations (TBI), Maintenance Assist Modules (MAMs), Interconnecting Devices (ID), and other equipment used for the repair and/or maintenance of aeronautical equipment as support equipment.) Many items of SE have low usage because they are used for infrequently occurring repairs or inspections. Regardless of their low utilization rate, each AIMD is supplied with this SE in order to have the ability to do those specific repairs. Consolidation of intermediate repair capability can reduce the inventories of low-usage support equipment through improved utilization.

Consolidation of SE can be particularly beneficial when SE availability is a constraint at one AIMD, but not the

other. If one AIMD is experiencing a workload backlog due to insufficient support equipment availability and the other AIMD has an excess of such support equipment, consolidation will allow the excess capacity to be used.

Past research and experience support the presumption that consolidation will reduce support equipment requirements. In research conducted at the Air Force Institute of Technology, a multi-command panel of experts examined the potential for reducing the numbers of Avionics Intermediate Shops (AIS) test sets used in F-16 intermediate level repairs, if repair capability were removed from individual sites and consolidated at a Central Intermediate Repair Facility (CIRF): "The consensus statement indicated an almost 50% reduction in test sets was possible."[Ref. 9: p. 109] This same research also cited other research as well as tests and applications of consolidated maintenance that supported the estimate of the panel: an Army study on a two-level maintenance concept; a 1977 Strategic Air Command test of the Consolidated Aircraft Maintenance Repair Center Concept (CRC); the implementation and operation of an Air Force centralized intermediate repair facility known as the Pacific Air Force Logistic Support Center (PLSC); and a Defense Resource Management Study (DRMS) on consolidating intermediate maintenance for CONUS-based A-10 aircraft.[Ref. 9: pp. 109-110]

The expert panel acknowledged that the excess support equipment created by consolidation will not immediately

produce savings because the cost of the equipment has already been incurred. However, several suggestions were made for using the surplus equipment: forward pre-positioning; as a source of replacements and spare parts (which could raise SE availability rates); and foreign military sales.[Ref. 9: p. 109]

3. Inventory Reduction.

Consolidating spare parts inventories is an aspect of repair capability consolidation. The spare parts inventory is comprised of three elements: 1) material in the pipeline (in transit between stocking or production points because material transportation is not instantaneous); 2) regular or "cyclical" stock necessary to meet average demand between replenishments; and 3) safety stock, which is inventory over and above regular stock and kept as a hedge against variability in demand and replenishment lead time [Ref. 10: p. 357]. Meeting aircraft component repair demand requires a high level of spare parts safety stock because the quantity and timing of demand (variability) is difficult to predict. Consolidating inventory can reduce the quantity of parts required for safety stock because "as demand is concentrated at fewer stocking points, there is less uncertainty in demand to take into consideration and total safety stocks can be reduced."[Ref.10: p. 274] The following theoretical example illustrates the potential for inventory savings through consolidation:

> North Island AIMD's average lead time demand for consumable Part XYZ is four per week, and demand varies with a standard deviation of two. Assuming normally distributed demand, 90% protection against stock-out (i.e, a 10% probability of stock-out) is 1.28 standard deviations above the mean. Accordingly, to have 90% confidence that a Part XYZ will be available when needed, North Island will have to maintain safety stock of 1.28 x 2 = 2.56 parts. Miramar AIMD's average weekly demand for Part XYZ is eight with a standard deviation of three. To maintain the same 90% confidence factor, Miramar's safety stock will have to be 1.28 x 3 = 3.84. This means the Part XYZ safety stock held between the two AIMDs is 2.56 + 3.84 = 6.40 parts.
>
> If repair capabilities were consolidated, the average consolidated demand for Part XYZ would be expected to be the sum of the demand of the individual AIMDs, which is 12 per week. The standard deviation of the consolidated demand would be the square root of the sum of the variances of the individual AIMDs, which is 3.6. Thus, to maintain a 90% confidence level of being able to fill requirements immediately upon demand, the consolidated activity would only have to maintain safety stock of 1.28 x 3.6 = 4.60 Part XYZs, which is a savings of 6.40 - 4.60 = 1.80 parts.

Another way in which consolidation may decrease inventory requirements is through the reduction of turnaround times and backlog, which is discussed in Section 5. Blanchard discusses the connection between inventory level and turnaround time: "Essentially, spare-part quantities are a function of demand rates and include consideration of ... an additional stock level of spares to compensate for repairable items in the process of undergoing maintenance. If there is a backup (lengthy queue) of items in the intermediate maintenance shop or at the depot awaiting repair, these items obviously will not be available as recycled spares for

subsequent maintenance actions; thus, the inventory is further depleted (beyond expectation), or a stock-out condition results."[Ref. 3: p. 47]

4. Improved Facilities Utilization.

Facility utilization can be viewed as the ratio of time used to time available for use, as well as in terms of space available versus space used. Both of these measures can be increased through consolidation. North Island and Miramar are presently operating day and night shifts Monday thru Friday and day shift on the weekends[11]. Facilities are in use 16 hours per day Monday thru Friday and eight hours per day Saturday and Sunday for a total of 96 out of the 168 hours available per week. This equates to 57% facilities utilization. Consolidation can justify and provide the resources for adding work shifts, which will improve facility time utilization. Additionally, some functions may be able to absorb additional personnel and equipment into currently unused work areas, which improves facility space utilization.

Consolidation also provides the opportunity to reduce or eliminate facility constraints on AIMD production. Removing low-volume repair functions will make space available to expand production capabilities or improve the work flow of high-volume functions.

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[11]North Island has one work center, the Versatile Avionics Sho Test (VAST) Work Center, operating 24 hours a day, 7 days a weel

5. Improved AIMD Productivity.

a. Past Research.

In the mid-1970's, the Air Force conducted a Maintenance Posture Improvement Program to evaluate alternative aircraft maintenance structures. One alternative studied was the Centralized Intermediate Logistics Concept (CILC), which called for a Centralized Intermediate Maintenance Facility (CIRF) to consolidate the intermediate level repair being done by various field units. The initial concern addressed by the CILC study was cost reduction, but force effectiveness became an additional point of study.

> "The studies suggested that centralized support achieved higher mission capabilities at reduced costs. Centralization improved technical proficiencies, concentrated production management, combined spares, and contributed to improved reliability."[Ref. 11: p. 18]

b. Queueing Theory and Productivity.

Queueing theory supports the conclusion that consolidating duplicate AIMD capabilities can improve productivity. Queueing theory is the study of the arrival of customers to some type of process, the time customers spend waiting to be served, and the time they spend being served. Queues form as customers arrive and await service. Waiting lines for bank tellers, traffic toll booths and grocery check-outs are familiar queues. Queueing theory has developed

a number of models that can be used to predict the average number of customers awaiting service, the average number of customers in the system, the average time spent awaiting service and the average total time in the system. These models are based on the three basic characteristics of queueing systems: 1) arrivals (customers or demand); 2) service mechanism (people and/or equipment); and 3) queue discipline (first-in/first-out, last-in/last-out, etc.).[Ref. 12; p.1]

The rate customers arrive for service (the number of customers that arrive during an interval of time) is one of the basic characteristics of a queueing system. For AIMDs, this characteristic is fulfilled by non-RFI aircraft parts and equipment requiring I-level maintenance or repair. The non-RFI items (customers) begin queueing up when they arrive at AIMD Production Control for induction into the repair cycle. The components must wait (Awaiting Maintenance (AWM)) in the repair cycle queue until a service channel (maintenance technician with required test/repair equipment), is available. The arrival rate of non-RFI items is based on the failure rate of the component and (for the vast majority of items) is independent of the failure rate of other items.

There is a finite population of potential AIMD "customers" (I-level repairable parts and equipment) at any one time. This population of customers is dependent on the number of supported activities and the number of components

installed in supported weapons systems. The arrival rate of components ("customers") for AIMD repair is dependent on the failure rate, or reliability function, of the specific equipment. Non-RFI items could arrive in a fairly consistent pattern (as with parts on scheduled maintenance intervals) or the arrival pattern could be quite irregular (unscheduled maintenance actions). The difference in the arrival rates of non-RFI components into the AIMD repair cycle is based on differences in the distribution of failures. Failure rate distribution patterns include gamma, Weibull, and many others.

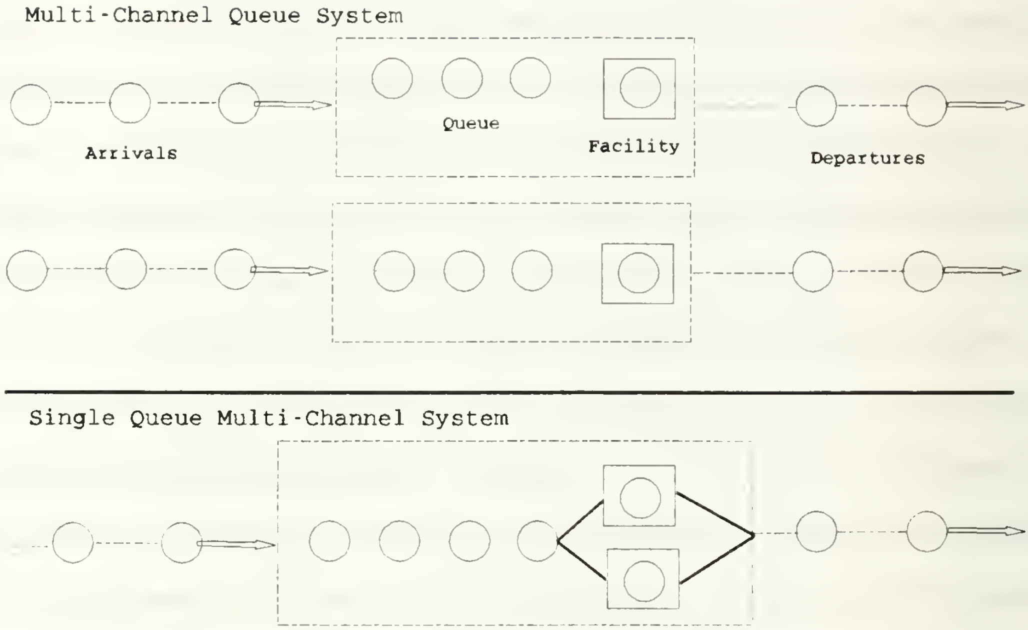
Service rate is a function of the number of servers available and the time taken by each to serve a customer. Most models provide analysis for "homogeneous" queueing systems where the customers need the same service and servers are able to provide the same service. AIMD production has both heterogeneous and homogeneous characteristics. When the overall production effort of the AIMD is considered, the AIMD appears to be a heterogeneous system because an AIMD repairs a wide variety of parts, with each part often requiring a different type of repair. When the focus of AIMD production is narrowed down to the repair of one particular part, the AIMD can be viewed as a homogenous system. However, even this homogenous system is subject to great variability. Parts of the same type often have differences in the type or depth of repair required. Additionally, service times for the same

type of repair will differ between technicians (servers) because the proficiency of a technician is determined by a number of variables, including experience, technical knowledge, and personal skill on the systems he/she is repairing. These variations in customer requirements and service times can be statistically analyzed to determine mean service times and demand distribution patterns.

Another basic queueing theory characteristic is queue discipline, which concerns the order in which customers are taken from the queue. Queues can have a variety of disciplines. Common methods include; first-in/first-out, last-in/first-out, shortest processing time or longest processing time. Additionally, there can be differences in the manner of customer service within these basic methods. Some queue disciplines allow for "jumping," which is common at retail store check-outs where customers "jockey" for position in the line with the fastest service. Other queues establish some type of priority system, like a hospital emergency room where the seriously injured patients are served first [Ref. 13]. As described previously in Chapter III, AIMDs have an established priority system for servicing customers. The first customers to be served are the Expeditious Repair, or "EXREP" components. Priority 2 (PRI 2) customers ("pool critical") are next in line, and Priority 3 customers are served last.

The variety of ways in which the three basic queueing characteristics can be combined is infinite. Consequently, much research has been devoted to the understanding and expansion of queueing theory, with emphasis on developing mathematical techniques to assist in the analysis of queueing models. A principal area of study in mathematical queueing analysis is the effects of combining two or more separate queues. This area of study has direct application to the analysis of consolidating AIMD workloads and repair capabilities. The process of combining queues is termed "pooling." Figure 5 is a graphic illustration to add visual clarity to understanding the pooling process.

Pooling has been shown to increase the efficiency of a queueing system by lowering the total time a customer spends in the system, and decreasing the waiting time for service and the total number of customers in the system at any one time. These system improvements are independent of the



Consolidating Individual Queues and Service Channels

Figure 5

arrival process and the distribution of service. In circumstances where the number of channels is very large, both good service and high utilization of assets are achieved.[Ref. 14: pp. 259-260]

The improvement of decreasing the time customers spend waiting is obtained by using idle resources. Separate systems are less efficient because a customer can be waiting for service in one system while the other system is idle [Ref.

15: pp. 39-55]. In separate systems, the next arriving customer may be blocked and have to wait until the customer being served departs the system. In a combined system, the probability of a customer having to wait for service is lower because the probability that an idle service channel is available is higher. Consequently, even when a customer must wait for service, the average waiting times are usually much less when separate facilities serving separate streams of customers are combined to serve all the streams together.[Ref. 16: pp. 90-92]

A numerical example can simplify the understanding of the potential for customer service improvements when queues are combined. In this example we will assume a homogeneous queueing system with Poisson arrivals, an exponentially distributed service rate, limited source population and an infinite capacity queue. A Poisson distribution is used for the arrival rate as this distribution has been previously assumed to represent the expected arrival pattern for the AIMD's unscheduled workload[12][Ref. 17: p. 43]. Although the AIMD repair cycle involves many steps, by looking at the total repair cycle as a single step (service time) we can consider it one process.

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[12]In the referenced thesis, statistical analysis of data revealed engine arrivals at NAS North Island AIMD followed a Poisson distribution.

Appendix A contains the output from the STORM[13] queueing analysis for the following example.

> Engine XYZ is a component of the aircraft communications system. There are 40 of these parts installed in NAS North Island aircraft, and 50 in NAS Miramar aircraft. Part XYZ has a Mean Time Between Failure (MTBF) of 100 hours, and a Mean Time To Repair (MTTR) of 10 hours. Thus, the expected arrival rate (λ) is 1 per 100 hour period, and the service rate (μ) per service channel is equal to 10 per 100 hour period. North Island AIMD has four test benches and technicians, and Miramar AIMD has five test benches and technicians. One test bench and one technician together form one service channel, thus North Island has four service channels and Miramar has five.
>
> Appendix A, page 1, shows the STORM data listing for this example. It shows North Island has four servers, Miramar has five, and if repair were consolidated, there would be nine servers. The source population is listed as finite (FIN). The arrival rate (ARR RATE) is 1 per period, the service time distribution (SERV DIST) is exponential, and the service rate is 10 per 100 hour period (.1 of a time period). The number of potential "customers" is 40 at North Island, 50 at Miramar, and 90 if the workload were consolidated. The blank portions of the problem data listing are not applicable to the example.
>
> Page 2 of Appendix A shows the results of the STORM queueing analysis of the data listing. The first two outputs show the characteristics of the independent North Island and Miramar service queues. The turnaround time (TAT) for a Part XYZ is 16.6 hours at North Island, and 15.6 hours at Miramar. XYZs will spend an average of 6.6 hours in the queue awaiting maintenance at North Island, and 5.6 hours at Miramar. At North Island, the average number of components in the system

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[13] STORM is an integrated software package consisting of quantitative modeling techniques drawn from operations research/management science, operations management/industrial engineering, and statistics. STORM Personal Version 2.0 Quantitative Modeling for Decision Support, is available from STORM SOFTWARE, INC., P.O. BOX 21196, Cleveland, OH 44121-0196.

(backlog) is 5.7, and Miramar's backlog averages 6.7 components for a total of 12.4 components backlogged in the two systems.

The last STORM output shows the results of combining the queues. By consolidating the repair resources of the two AIMDs, utilization of repair channels increases while the total time in the system, time awaiting maintenance, and backlog all decrease. Repair channel utilization is 88.2% in the consolidated repair system, which is approximately a 2% increase over the average utilization at North Island and Miramar. Average turnaround time decreases to 13.4 hours, which is an 18% improvement over the weighted average turnaround times of the independent systems. The average number of parts in the consolidated repair system (backlog) is 10.7; a 15% improvement over the total of 12.4 for the independent systems.

c. Cannibalization Potential.

Consolidation of AIMD repair capabilities will affect the potential for component "cannibalization." Cannibalization is the act of removing a good part from one component to repair another. Many of the components AIMDs repair are referred to as Weapons Replaceable Assemblies (WRAs), and many WRAs are comprised of components called Shop Replaceable Assemblies (SRAs). When a WRA is inducted into the AIMD, technicians perform diagnostic testing to determine which SRAs are not functioning properly. If a malfunctioning SRA is in stock in the spare parts inventory, the WRA under repair will experience minimal awaiting parts (AWP) time. However, if SRAs are not in stock (NIS) they must be ordered, and delivery times can vary from days for parts stocked at a

local Navy Supply Center (NSC) to over a year for items that must be procured from the manufacturer. When SRAs are backordered with a long estimated date of delivery (EDD), technicians will commonly cannibalize a known good SRA from another malfunctioning WRA to produce a Ready For Issue (RFI) WRA.

The malfunctioning WRAs in the AIMD repair cycle provide the source for SRA cannibalization. When two AIMDs are independently repairing the same WRAs, the potential to cannibalize at each AIMD is limited to the WRAs that have been inducted into their individual activities: AIMD-1 cannot cannibalize from AIMD-2's WRAs, and vice versa. Consolidating the WRA repair at one site would combine the two individual inventories of malfunctioning WRAs, thereby increasing the inventory of SRA cannibalization candidates. The increase in cannibalization candidates would improve the possibility of providing the required SRAs to repair the WRAs.

A fully-functional WRA can be built by cannibalizing from several malfunctioning WRAs, provided that within the group of malfunctioning WRAs there is at least one "good" (properly functioning) SRA of each type used in the WRA. Thus, the number of RFI WRAs that can be produced from a group of malfunctioning WRAs is limited by the minimum number of good SRAs within each SRA type.

The following two examples, using a fictitious WRA called a Flight Computer XYZ, illustrate that consolidation

will not decrease cannibalization potential, and under most conditions, will increase cannibalization potential and produce more RFI WRAs than two AIMDs operating independently. The examples are not complete theoretical proofs of the effects of consolidation on cannibalization.

Flight Computer XYZ is comprised of three SRAs, SRA-1, SRA-2 and SRA-3. AIMD-1 currently has eight WRAs and AIMD-2 has nine WRAs awaiting parts (AWP). Each WRA is waiting for one of the three types of SRAs before it can be repaired to a fully functioning status and made RFI.

Example 1, Table 3, shows the number of good and bad SRAs for the WRAs at each AIMD. From the table, AIMD-1 is limited by SRA-2 to produce two RFI Flight Computers and AIMD-2 is limited by SRA-1 to produce three RFI Flight Computers through cannibalization for a total of five RFI computers. However, the Consolidated AIMD with the combined population of WRAs can produce ten RFI units through the cannibalization of good SRAs, which is a 100% increase in the total number of RFI Flight Computers produced by consolidating.

Table 3: **INCREASED CANNIBALIZATION POTENTIAL**

SRA	AIMD-1		AIMD-2		Consolidated AIMD	
	Bad	Good	Bad	Good	Bad	Good
SRA-1	1	7	6	3	7	10
SRA-2	6	2	1	3	7	10
SRA-3	3	5	7	7	5	12
TOTAL WRAs at EACH AIMD	8	N/A	9	N/A	17	N/A

Example 2, Table 4 shows the case where consolidation fails to produce an improvement in RFI output through cannibalization. In this example the number of non-RFI WRAs is the same as the previous example, but the distribution of bad SRAs is changed. AIMD-1 is limited by SRA-2 to repair only three WRAs, and AIMD-2 is also limited by SRA-2 to produce only three RFI WRAs for a combined total of six RFI Flight Computers. Thus, the Consolidated AIMD is also limited by SRA-2 to produce the same total of six RFI Flight Computers. This case illustrates one situation where no improvement in cannibalization would be realized through consolidation. This case represents the exception to improved cannibalization potential through consolidation. The possibility of this case occurring is unlikly considering the variability of SRA failures.

Table 4: **NO IMPROVEMENT IN CANNIBALIZATION POTENTIAL**

SRA	AIMD-1		AIMD-2		Consolidated AIMD	
	Bad	Good	Bad	Good	Bad	Good
SRA-1	2	8	1	8	3	14
SRA-2	5	3	6	3	11	6
SRA-3	1	7	2	7	3	14
Total WRAs at Each AIMD	8	N/A	9	N/A	17	N/A

Determining the actual affects and theoretical proof of consolidation on cannibalization would require in-depth statistical analysis and computer simulation of the process and is not contained in this thesis.

6. **Drawbacks.**

The benefits of consolidation are achieved at some cost. Consolidation will require additional transportation resources and some facility upgrade costs may be incurred. Consolidation may have some negative affects on customer service, and there will be an additional administrative burden to manage the consolidated items. Consolidation will also reduce military resiliency. Each of these drawbacks is discussed in the following sections.

a. Transportation Costs.

Transportation is an essential element of consolidation and is necessary for transferring non-RFI and RFI materials between the air stations involved. A dedicated, regularly scheduled transportation network also facilitates

maintenance and supply management for the materials being repaired in the consolidated repair system. The additional transportation costs incurred due to consolidation will offset savings and must be considered in the consolidation decision.

Blanchard identifies transportation time and cost as two primary considerations when analyzing transportation and handling factors for logistic support [Ref. 3: p. 63]. Transportation costs for consolidation are directly related to the degree of consolidation, the types of parts and equipment involved, and the desired level of customer service. The frequency of deliveries is a cost versus customer service decision. More frequent deliveries may mean higher transportation costs, but faster delivery times would reduce the total turnaround time for parts, thus improving customer service.

A vehicle and driver are necessary elements in transporting material from air station to air station. The following costs relate to establishing a dedicated transportation channel between NAS North Island and NAS Miramar. A one-ton panel van, Public Works Vehicle Code 362, with an eight-foot by ten-foot cargo floor and a ceiling height of seven and one-half feet (a total of 600 cubic feet of usable cargo space) could be rented from the Public Works Center in San Diego for $2.00 an hour with unlimited mileage. In order to have the vehicle totally dedicated for transporting parts between the two air stations, the agreement

for renting the van must be based on a minimum of 160 operating hours per month. The rental fee is based on operating hours and includes maintenance and fuel costs. Using this rate, the minimum operating cost for this vehicle would be $320.00 per month or $3,840.00 per year. For comparison, a smaller half-ton van, Public Works Vehicle Code 329, rents for $1.75 per hour, and a larger two and one-half ton stake truck, Public Works Vehicle Code 525, rents for $2.60 per hour. The respective minimum operating costs for these vehicles would be $3,360.00 and $4,992.00 per year.[Ref. 18]

A dedicated driver would also be required to insure full use of the transportation network. The half-ton and one-ton vans are usually driven by civil service personnel classified as Wage Grade Five (WG-5) [Ref. 19]. Annual salary for a WG-5, including base pay plus 32% for fringe benefits, would be $29,981.95,[14] based on 40 hours a week for 52 weeks [Ref. 20]. Thus, minimum total cost for one year for a dedicated one-ton van and driver, is $3,840.00 + $29,981.95 = $33,821.95. The two and one-half ton stake truck is normally driven by civil service personnel classified as Wage Grade Seven (WG-7) with a Motor Vehicle Class B License. The approximate annual salary for this individual, including base

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[14]Wage Rate ($10.92 per hr) X 1.32 = $14.41. $14.41 X 40 ours X 52 weeks = $29,981.95 per year.

pay and fringe benefits, would be $32,178.43[15]. Thus, total annual operating cost for the two and one-half ton stake truck would be $4,992.00 + $32,178.43 = $37,170.43. An alternative to using the civilian driver would be to use military personnel. Using the military personnel costs from Table 2 on page 30, if a paygrade E-3 military member were substituted for the WG-5 civilian driver, annual costs for the driver would be reduced $7,243.95, and total costs would be reduced to $26,578 per year. Similar reductions in operator cost for the two and one-half ton stake truck would be seen by substituting a military personnel for the WG-7 civilian driver.

The cycle time for the material flow between the two air stations is dependent on the distance traveled and the time to on-and off-load the material. For simplicity, other variables as traffic, road and weather conditions, or loading dock conditions and availability were not included in the assumptions. The distance between NAS North Island and NAS Miramar is approximately 25 miles. Allowing for 45 minutes travel time each way and 30 minutes to on-load and off-load at each site there would be a cycle time of two and one-half hours per round trip. Assuming seven and one-half productive hours per shift, one truck and driver could accomplish three round trips between the two AIMDs per shift.

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[15]Wage Rate ($11.72 per hour) X 1.32 = $15.47. $15.47 X 4 hours X 52 weeks = $32,178.43 per year.

The volume of items transported between the two air stations will determine the number and size of vehicles, and the number of drivers required to establish the transportation network. The total volume of material can be estimated from the number, weight, and cubic feet of parts flowing between the air stations. This information for common items is contained in Appendix C and Appendix D. The daily average weight and cubes of material transported is a point estimate for the actual material transported. The estimate is a sample mean (average) and should be regarded as such. Actual volume of material will vary during any given interval, that is, on some days there will be less material transported than the mean and on other days there will be more material transported than the mean. The actual statistical confidence interval on the daily amount of material transported was not computed.

The average volume of material transported for partial consolidation of the AIMDs was determined by using Appendices C and D[16]. The common items were assigned to the individual AIMD for repair on the basis of the RFI rate and quantity of items processed. The AIMD with the better RFI rate for the component and with the largest number repaired was assigned the repair responsibilities. However, if the RFI

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[16]Number of items processed was attained from the Naval viation Logistics Data Analysis database covering the period July 990 to June 1991. Weight and cube data was attained from the viation Supply Office, MIL-STD-726 Packaging Database. From this ata, a point estimate was derived for the average daily weight and ube transported.

rate was approximately the same at both AIMDs, the AIMD that processed the greater number was assigned the component repair. In the case of a tie the components were assigned subjectively. Once the repair site was assigned, the average volume transported was calculated. For each component, the number of items processed per year at the AIMD that would no longer do repair was divided by 250 days[17] to arrive at the average number of components processed per day. This average was multiplied by the weight and cube of the component resulting in the average weight and cube for each component to be transported to the other AIMD per day. The individual components were then totalled to obtain the average total weight and cubes transported daily. From Appendix C, the total weight and cube transported one-way per day was 691.28 lbs and 81.93 ft^3. To obtain an average total daily figure, assuming a similar amount of material is returned after repair, multiply the one-way total by two, for a daily average of 1382.56 lbs and 163.86 ft^3.

From these computations, the estimated volume of items transported from NAS North Island to NAS Miramar for repair is 527.34 lbs and 58.27 ft^3, and the estimated volume of items transported from NAS Miramar to NAS North Island for repair is 163.89 lbs and 23.66 ft^3. In this case the one ton

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[17]52 weeks per year X 5 work days per week - 10 Federa[l] holidays = 250 work days per year.

van would appear to provide adequate transportation capacity for the material.

The average total volume of material transported between the AIMDs assuming total consolidation of entire work centers was computed in a similar manner. As discussed in Chapter VI, there are nine work centers considered to be the primary candidates for consolidation. Potential for consolidation was assumed if the quantity of the items processed for which both AIMDs had repair capability (referred to as "common" items) was 50% or greater of the total number of items processed by the work center at either AIMD. These work centers are 61A, 61B, 62B, 62D, 62F, 670, 81A, 81B, and 81C (See Table 10 on page 88). Assuming the work centers with the lowest production rates were consolidated at the other AIMD, and assuming the repair of consolidated items is handled on a repair-and-return basis, the workload originating from NAS North Island for Work Centers 61A, 62B, 62D, 62F, 81A, 81B, and 81C would have to be transported to and from NAS Miramar, and the workload originating from NAS Miramar for Work Centers 61B and 670 would have to be transported to and from NAS North Island.

The average component weight and cube transported per day was calculated for each work center from the weights and cubes of the common items listed in Appendix C. Summing the individual components average weight and cube transported daily and dividing the sum by the total number of common items

processed for which weight and cube data was available resulted in an estimated average component's weight and cube transported daily. To calculate the total weight and cube transported daily per work center, the average component weight and cube was multiplied times the total number (from the historical data) of items processed by the work center and multiplied times two to account for the return of repaired components. Table 5 summarizes the results of these computations by listing the candidate work centers, number of items processed by the work center per year, the average component's daily weight and cube transported and the total daily weight and cubes transported between the air stations.

Table 5: **WEIGHT AND CUBE OF CONSOLIDATED ITEMS**

WORK CENTER	NUMBER OF ITEMS PROCESSED ANNUALLY	AVG DAILY WT/CUBE PER ITEM TRANSPORTED	AVG TOTAL DAILY WT/CUBE TRANSPORTED (lbs/ft^3)
61A	1575	.0485/.0048	152.7/15.06
61A	1120	.1533/.0142	343.32/31.8
62B	1303	.0307/.004	79.92/10.3
62D	345	.0144/.0009	9.94/.64
62F	764	1.0202/.1788	1559/273.24
670	3936	.0215/.0064	169.4/50.32
61A	129	.0161/.0007	4.14/.19
81B	607	.0536/.0082	65.06/9.98
81C	857	.0325/.005	55.64/8.58
TOTAL			2439.12/400.11

As Table 5 shows, the estimated daily average total weight and cube of items transported between the two air stations is 2439.12 lbs and 400.11 ft^3 . Although a half-ton van making three trips per day would be sufficient to handle this average daily workload, a one-ton van would only cost $10.00 more per month and would provide reserve capacity for instances of unusually high volume or weight.

b. Facilities Modification Costs.

As with transportation costs, facilities costs will be directly related to the degree and type of consolidation and must be considered in the consolidation decision. Consolidation may require the modification of present

facilities in order accommodate the changes in workload. For example, if the consolidation requires installation of additional test equipment and the present workspace is too small to allow expansion, an addition to the building or modification of its interior might be required. Another potential problem is that increases or changes in power requirements might call for the modification of utility services.

c. Customer Service Impact.

As stated previously, the objective of consolidation is cost reduction without degradation of customer service or operational readiness. The ultimate customers of the AIMD are aircraft squadrons, which receive benefit either directly through AIMD services such as on-aircraft Non-Destructive Inspection (NDI), or indirectly through receipt of the parts the AIMD repairs for the Supply Department's replacement parts inventory (the rotable pool). Consolidation will affect service to squadrons in two fundamental ways: 1) turnaround time; and 2) accessibility. It is essential to consider the impact consolidation will have on these two customer support factors before decisions are made regarding which capabilities to consolidate.

(1) Turnaround Time. Even if consolidation results in reduction of time spent in the repair cycle (as discussed in Section 5), the additional time it takes to transport items

between the AIMDs may increase the total time it takes to return an item to inventory. If so, the additional turnaround time (TAT) could create a requirement for additional spares in the rotable pool inventory in order to prevent a significent increase in the probability of a stock out.

As stated in Chapter III, air station Supply Departments get an allowance of repairable items for use as spares inventory. Squadrons receive replacements for non-RFI items from this spares inventory, which is commonly called the rotable "pool." The Aviation Supply Office (ASO) determines the pool allowance for each item in the pool, and a portion of the allowance comes from a determination of the Local Repair Cycle Requirement (LRCR). ASO Instruction 4441.16H directs the "Raw" LRCR Quantity be computed by the following formula:

(Number of Repairs per Period x Avg Daily Turnaround Time)

$$\div$$

Number of Days in Period

The Raw LRCR score is applied to the LRCR Quantity Table in ASO Instruction 4441.16H to determine the Local Repair Cycle Requirement Quantity allowance for the pool. The purpose of this table is to produce a rotable pool allowance that includes both mean demand during the repair turnaround time and safety stock (which protects somewhat against the variability of demand and turnaround time).

Assuming an item had 30 repairs over a 60 day period (the minimum period allowed for computation of the Raw LRCR) and the average TAT was 1 day, the Raw LRCR would be:

$$(30 \times 1) \div 60 = .500$$

(which is the average number of repairs per turnaround time.) A Raw LRCR of .500 computes to a LRCR Quantity of 2, which is the amount of safety stock ASO would add to the fixed allowance inventory in order to provide inventory protection while items are undergoing repair. If the repair of that item were consolidated and transportation time between the AIMDs added an average of one day to the average TAT, the RAW LRCR would change to:

$$(30 \times 2) \div 60 = 1.000$$

and the LRCR Quantity would increase to 3. The actual affect of increase turnaround time on LRCR Quantity would, of course, vary from item to item. Looking at the formula, it is easy to see that for items with an even lower repair volume than the example given above, one additional day in TAT would make little change in the LRCR Quantity.

The Deputy Aviation Support Division Officer for the NAS Miramar Supply Department, Mr. Henry Maines, had perhaps the most astute observation regarding the affect of a one-day increase in turnaround time. Mr. Maines stated that one additional day of turnaround time may not adversely affect items currently stocked at adequate levels, however, for fast-turnover items for which Pool allowance is presently

inadequate,[18] an additional day of turnaround time would undoubtedly affect customer service.[Ref. 21]

(2) Accessibility. One of the primary determinants of the quality of AIMD customer service is the accessibility between the AIMD and the squadrons. Squadrons must be able to access direct support functions in a timely manner in order to ensure that the organizational maintenance effort is not unduly delayed. Consolidation will negatively affect accessibility to the AIMD. Accordingly, direct support services where immediate accessibility is vital to daily squadron operations, such as the Support Equipment Pool, should not be considered for consolidation. Any delay to these "immediate need" services would adversely affect operational readiness.

AIMDs also supply on-site I-level technical expertise to assist squadrons in resolving troubleshooting or repair problems. Presently, it is very easy for squadron personnel to access the AIMD and AIMD personnel. For most activities, the AIMD is within walking distance from squadron work spaces. If a support problem arises, maintenance personnel can be on-site in a matter of minutes to resolve it. Under consolidation, the physical distance between O-level

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[18]There are a number of reasons for inadequate Pool quantity, ncluding: insufficient spares procurement; new program start-up; nanticipated demand; unexpectedly high failure rate; and nadequate funding.

activities at the non-repairing air station and the AIMD with consolidated repair capability will make it more difficult to resolve these types of maintenance problems.

Consolidation will also affect the customer/supplier interface between the AIMDs and the Functional Wings. At present, Functional Wings exercise control over I-level support for their squadrons because the AIMD falls under their chain of command. Depending on the form of consolidation, Functional Wings could lose some or all of this control, making it more difficult for them to direct I-level resources toward specific Functional Wing priorities.

d. Expanded Maintenance Management and Administrative Responsibilities.

Consolidation will require maintenance managers to deal with a new category of repairable items: those for which I-level repair capability has been consolidated. O-level maintenance managers factor the availability of on-site I-level support into the scheduling of their workload. Consolidation will require O-level managers to consider the additional turnaround time and reduced accessibility of consolidated services and repairs. Intermediate level maintenance managers will now have to manage workload originating from two air stations instead of one. This means dealing with maintenance managers from two aircraft communities instead of one.

There will also be added maintenance management complexity at the Functional Wing and Type Commander levels. As stated previously, Functional Wings will lose some direct control over the items for which repair is consolidated at an AIMD under the control of a different Functional Wing. With few exceptions, Type Commanders view I-level aircraft support in an aircraft/air station relationship because I-level support is provided at the air station at which the aircraft are based. Consolidation will alter this relationship and complicate Type Commander management of I-level support.

Consolidation will require additional administrative work. Supply and maintenance records will have to be changed to reflect changes in the location at which repair occurs. The transfer of non-RFI and RFI assets between air stations will have to be documented, which will be an on-going additional administrative burden.

e. Military Resiliency.

Resiliency is the ability to recover from change or misfortune. Military resiliency is often thought of in terms of combat operations, i.e., the ability of an infantry company to reconstitute after sustaining combat losses. Consolidation will leave geographical areas more susceptible to total loss of its consolidated repair capability. For example, with both North Island AIMD and Miramar AIMD having instrument repair capability, there is an alternate site to continue instrument

repair if one site should have to shut down as a result of fire or earthquake. However, if instrument repair were consolidated at one or the other of these sites and there was a disaster such as fire or earthquake that destroyed the consolidated repair site, I-level instrument repair would cease in the San Diego area.

V. OPTIONS FOR PARTIAL CONSOLIDATION

The authors feel there are three primary questions to be answered when considering the options for consolidating the duplicate capabilities of AIMDs located in the same geographical area:

1) What capabilities are candidates for consolidation?

2) At which AIMD should capabilities be consolidated?

3) How should consolidated capabilities be managed?

A. CANDIDATES FOR CONSOLIDATION

1. Organizational Perspective.

One way to assess which AIMD capabilities are candidates for consolidation is to view consolidation alternatives with regard to the <u>organizational level</u> at which consolidation takes place. Since this thesis is analyzing the possibilities for partial consolidation and not total consolidation of AIMDs, the largest organizational units considered as candidates for consolidation are the Production Divisions, followed by Division Branches, followed by the smallest organizational level: the work centers. Although work centers are the smallest recognized AIMD organizational unit, within work centers there often are distinct task areas, which are usually distinguished by the type of equipment

worked on and/or skills of the technicians involved in the repair. These "Task Areas" are also candidates for consolidation.

2. Service Perspective.

Another way to view candidates for consolidation is to take a service perspective: What AIMD <u>services</u> are candidates for consolidation? As with the organizational perspective, the service perspective can be viewed in terms of the degree of consolidation: An entire service or just a portion of a service could be consolidated. For example, Avionics Repair is a service the AIMD provides. Avionics Repair can be divided into more specific areas of repair, such as Communications Equipment, which can be categorized by types of components like Receiver/Transmitters (R/Ts), and R/Ts can in turn be broken down into specific components, such as the ARC-159 Transceiver.

3. Consolidation Candidates.

Since the primary objective of consolidation is to reduce costs, candidates for consolidation should have the potential for reduction in one or more of the areas of savings described in Chapter IV: manpower; support equipment; and inventory. Accordingly, consolidation candidates should have some similarities because there can be little or no cost savings in areas where the types of manpower required, types of support equipment used, and/or the types of items worked on

are so dissimilar that there is no opportunity for reduction of these assets through consolidation.

The "ideal" repair capabilities for consolidation are those with exactly the same types of manpower and support equipment assets being used to repair exactly the same components. However, repair capabilities with lesser degrees of commonality should also be considered for consolidation. Areas where the skills and support equipment used are fairly standardized regardless of the type of components repaired may be good candidates for consolidation regardless of differences in the types of components serviced because they offer opportunities for reduction of manpower and support equipment.

Areas in which one AIMD has a substantially larger workload than the other AIMD provide good opportunities for savings through consolidation. The workload at one AIMD may be small enough to be absorbed by the other AIMD with little or no increase in manpower or support equipment.

B. LOCATION OF CONSOLIDATION

There are two options for locating the consolidated repair capabilities: 1) Single-site all consolidated capabilities at one AIMD; and 2) Distribute consolidated capabilities among the AIMDs involved in the consolidation (Multiple-siting).

1. Single-siting.

Single-siting all the consolidated repair capabilities would greatly simplify the management of consolidated items.

The Type Commander and Functional Wing maintenance and supply managers would only have to be concerned with overseeing one AIMD with consolidated repair vice two. Single-siting would only change the I-level support procedures for the aircraft at one air station rather than two. Single-siting consolidated repair capabilities would enhance the Prime Intermediate Maintenance Activity (PIMA) program currently being prepared for fleet-wide implementation[19]. Single-siting could also prove beneficial if the decision were later made to totally consolidate AIMDs.

Single-siting has some drawbacks. Single-siting would increase the erosion of military resiliency for I-level repair capabilities. If the AIMD at which all consolidated capabilities were sited was struck by fire or earthquake, I-level repair for all the consolidated items could be affected. Additionally, depending on the degree of consolidation, the additional administrative burdens regarding personnel and maintenance management could require additional staff for the AIMD with consolidated repair. (However, there could be some offset in personnel reductions at the AIMD relinquishing repair capability.)

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[19]The Prime Intermediate Maintenance Activity (PIMA) progr is currently being developed by the Naval Aviation Maintenan Office. Under PIMA, no AIMD capabilities are consolidated, b certain AIMDs would have ultimate repair capability a condemnation authority for designated items. If an AIMD BCM'd o of the designated components, the component would be sent to t PIMA instead of a depot.

2. Multiple-siting.

If multiple-siting is desired, the decision of which AIMD would get a specific repair capability appears to be an easy decision on the surface. The AIMD with the largest organic workload (work generating from the aircraft squadrons based at the AIMD's air station) for the capability would seem to be the logical choice as the AIMD at which to establish consolidated repair. This AIMD would be expected to already have the more extensive repair capabilities (facilities, equipment, manpower, inventory), thus consolidating repair capabilities at this AIMD would entail less expense for moving equipment, transferring personnel, etc., as well as minimize the number of non-RFI items transported between the air stations. However, because we are interested in maximizing the benefits of consolidation, there are many questions to be answered before such a decision could be made, including:

1) Are there facility constraints that cannot be easily overcome at one AIMD that make the other AIMD the more feasible choice?

2) Are there changes to facilities planned for the future that will affect the decision?

3) What are the future plans for workload at the AIMDs? Is the item to be consolidated going to be phased out at one or both sites in the near future?

4) If there is more than one repair capability to be consolidated, how does each location decision affect the

others? Some combinations of workload may be mutually exclusive at a particular AIMD. For example, if three different repair capabilities are to be consolidated between two AIMDs, AIMD-1 may be able to accept the consolidated workloads of Repair Capability "A" and Repair Capability "B" together, but not Repair Capability "A" with Repair Capability "C", etc. It is easy to see that with even just a few repair capabilities to be consolidated there can be a large number of different possible combinations of workload assignment.

C. MANAGEMENT OF CONSOLIDATED ITEMS

The authors feel there are two basic options for managing the items for which repair capabilities have been consolidated: 1) Manage the consolidated items on a repair-and-return (R&R) basis; and 2) return the repaired items to the wholesale supply system.

1. Repair and Return.

Under a repair-and-return (R&R) arrangement, the non-RFI items originating from the aircraft at the air station no longer having repair capability (which will be referred to as the "Source Site") would be transported directly to the AIMD at which repair capability has been consolidated (which will be referred to as the Consolidated Intermediate Maintenance Site), where they would be repaired and returned to the Source Site.

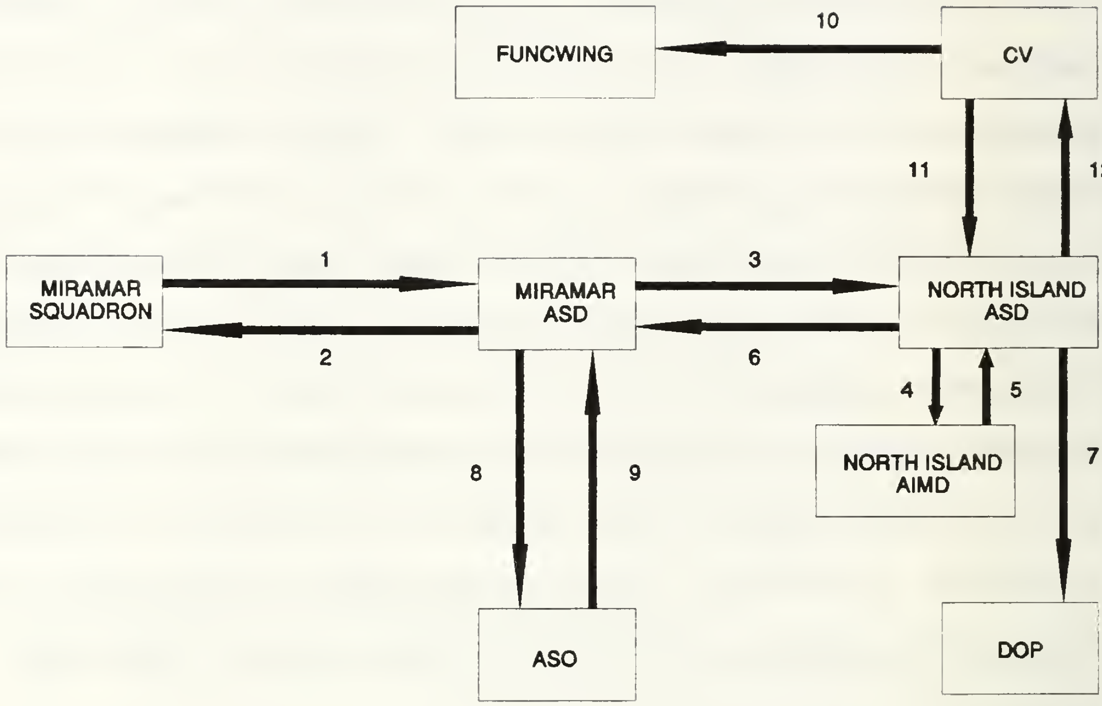
Because only certain capabilities will be consolidated between the AIMDs, consolidation would only affect the processing of items for which repair capability is consolidated, and only at the site no longer having capability. Using NAS North Island and NAS Miramar as examples, if Miramar AIMD transfers capability to repair navigation computers to North Island AIMD, the intermediate support process for navigation computers has been altered only for aircraft based at NAS Miramar. Navigation computers installed in aircraft based at NAS North Island will still follow the existing AIMD repair cycle process described in Chapter II.

The following paragraphs describe the repair-and-return process for a failed part for which North Island AIMD is designated as the Consolidated Intermediate Maintenance Site (CIMS). Figure 6 illustrates the possible R&R process, and contrasts the AIMD repair cycle procedures depicted in Figure 4 on page 23.

(1) Miramar squadron turns in a non-RFI part for which North Island AIMD is designated the Consolidated Intermediate Maintenance Site (CIMS), and orders a replacement part.

(2) Miramar ASD provides replacement part from its pool inventory or by EXREP action.

(3) Miramar ASD assigns the appropriate repair priority and forwards the non-RFI part to North Island ASD.



Repair and Return Procedures

Figure 6

(4) North Island ASD inducts the defective part into the North Island AIMD repair cycle with the priority assigned by Miramar ASD.

(5) North Island AIMD either repairs the part or declares it BCM and returns it to North Island ASD.

(6) The repaired part is forwarded to Miramar ASD for placement in inventory or, if EXREP, delivery to squadron.

(7) If declared BCM, North Island ASD will ship the part to the Designated Overhaul Point (DOP) per Miramar ASD instructions.

(8) Miramar ASD orders replacements for BCM'd parts.

(9) For BCM'd parts, ASO charges AVDLR cost to Miramar ASD/AIMD AVDLR account.

(10) CV requests repair and return disposition instructions from COMFIT/AEWWINGPAC (the Functional Wing for Miramar aircraft) for defective components removed from Miramar-based aircraft.

(11) CV ships parts for which North Island is the designated CIMS directly to North Island.

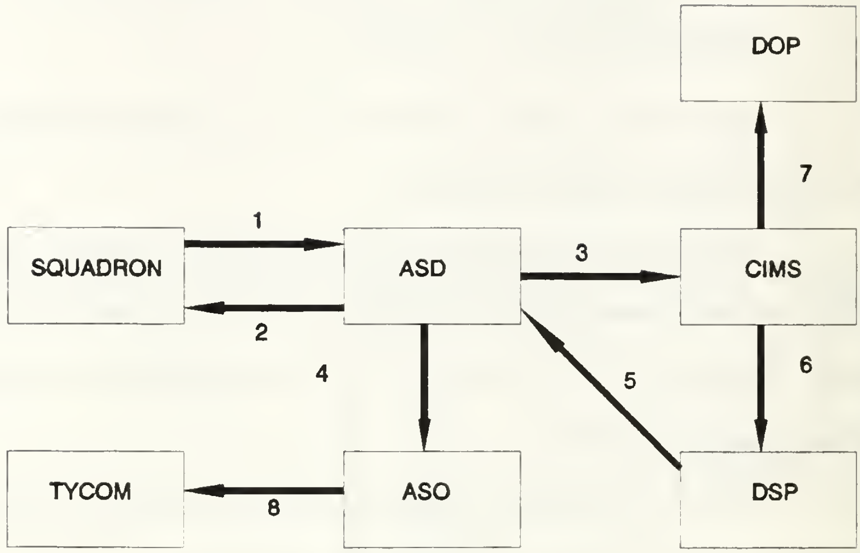
(12) North Island returns repaired parts to CV, or forwards BCM'd parts to DOP per CV instructions. ASO charges the CV AVDLR fund for replacements.

2. Return Repaired Items to the Wholesale Supply System.

Items for which repair has been consolidated could be treated as assets for the "wholesale" supply system. That is, once an item is repaired, it is returned to a Designated Stock Point (DSP) for distribution to any activity with an outstanding requisition, which is the same procedure proposed for handling items repaired under the PIMA concept. Figure 7 and the following discussion explain this procedure.

1) Squadron turns non-RFI item into ASD and orders replacement part.

2) ASD supplies squadron with a replacement from the rotable pool, if available.



Returning Assets to the Wholesale Supply System

Figure 7

3) Since the Source Site AIMD has no repair capability, the part is automatically declared BCM and shipped to the CIMS via normal supply channels.

4) ASD requisitions replacement for rotable pool from ASO.

5) ASO provides Pool replenishment from Designated Stock Point (DSP) inventory and charges the Source Site's ASD/AIMD AVDLR account.

6) CIMS repairs item and ships to DSP.

7) If CIMS was unable to repair item, declares it BCM and ships it to the Designated Overhaul Point.

8) ASO compensates Type Commander AVDLR funds for items repaired by CIMS.

3. Pros and Cons.

Managing items on a repair-and-return basis would cause the least disruption to the Navy supply system as a whole. The consolidated items would be transferred between air stations with locally-run transportation assets, and the items would have to be handled only by personnel at the air stations involved. However, R&R items require time-consuming additional management by both supply and maintenance managers. Supply managers at the air stations involved in the consolidation would have to maintain detailed records and maintain formal correspondence regarding the transfer and receipt of R&R items. Special accounting would be required to charge the Source Supply Department for repair parts used. CIMS maintenance managers would have to ensure that R&R items are integrated into the CIMS' organic workload on an impartial basis. Additionally, CIMS managers would have to ensure R&R items are not unfairly used as cannibalization carcasses to repair organic workload.

Managing consolidated items as wholesale assets would greatly reduce the managerial and administrative burdens at the non-repairing air station. The non-RFI assets would simply be BCM'd, and a replacement requisitioned in accordance with established procedures. There would be no requirement to maintain other than normal transfer and receipt records, and no need to correspond with the Supply Department at the air station at which the CIMS is established. Additionally, since

managing consolidated items as wholesale assets would correspond with the management procedures of the PIMA concept, consolidated items would not require a separate set of changes to supply procedures. However, if there was a significant number of items consolidated, the additional throughput at supply handling points could require additional personnel to handle and track the parts flowing through the system. Additionally, the transportation and handling of items through the various supply points would increase the repair turnaround time of consolidated items.

VI. COMMONALITY OF THE NAS NORTH ISLAND AND NAS MIRAMAR AIRCRAFT INTERMEDIATE MAINTENANCE DEPARTMENTS

Three data sources were used to research the commonality of capabilities of the NAS North Island and NAS Miramar AIMDs: 1) The OPNAV 1002 Manpower Authorization (MPA); 2) The Tailored Outfitting Listing (TOL); and 3) Production data from the Naval Aviation Logistics Data (NALDA) database.

A. OPNAV 1002 MANPOWER AUTHORIZATION

The OPNAV 1002 Manpower Authorization (MPA) lists all enlisted military billets authorized for an AIMD. The MPA is an excellent source of information about repair capability commonality because it lists personnel billets by work center assignment, position title, rate, and Navy Enlisted Classification (NEC). The NEC codes are used to identify non-rating wide skills, knowledge, aptitudes or qualifications that must be documented to identify both people and billets for management purposes [Ref. 22]. Award of an NEC is dependent on completion of prescribed training and/or experience requirements, with most NECs requiring completion of a formal course of instruction. The majority of intermediate level maintenance billets are coded for a

specific NEC, therefore NECs provide an excellent means of comparing the repair capabilities of different AIMDs.

Comparing the Manpower Authorizations of the North Island and Miramar AIMDs revealed areas of commonality in organization, personnel structure and training, and in types of equipment repaired. As expected, the North Island and Miramar MPAs revealed that both AIMDs are manned for the same production divisions. Each AIMD is manned for Production Control, Quality Assurance, Airframes, Power Plants, Avionics, Armament Equipment, Survival Equipment, and Support Equipment Divisions.

The two MPAs also showed great similarity in NECs. Appendix B lists all the production rate (AD, AE, AME, AMH, AMS, AO, AT, and PR) NECs of the two AIMDs. To summarize Appendix B, there are 90 different NECs listed in the two MPAs. Miramar has 68 different NECs, North Island has 65 different NECs, and there is a total of 42 NECs common to both AIMDs. Thus, there is an overall 47% NEC commonality of all NECs listed (42 out of 90); a 65% NEC commonality of Miramar with North Island (42 out of 65); and a 62% NEC commonality of North Island with Miramar (42 out of 68). Table 6 lists total numbers of NECs by rating, the number of NECs common in each rating, and percentage of commonality.

The high NEC commonality in the areas of Safety Equipment, Ordnance Equipment, Support Equipment, and Survival Equipment reflect the high commonality of these types of equipment

Table 6: **NAVY ENLISTED CLASSIFICATION (NEC) COMMONALITY**

RATE / FUNCTIONAL AREA		TOTAL NECs	NUMBER COMMON	PERCENT COMMONALITY
AD	POWER PLANTS	11	3	27%
AE	ELECTRICAL	11	6	55%
AME	SAFETY EQUIPMENT	[illegible]	1	100%
AMH	HYDRAULICS	2	2	100%
AMS	STRUCTURES	5	4	75%
AO	ORDNANCE EQUIPMENT	2	2	100%
AS	SUPPORT EQUIPMENT	8	6	75%
AT	AVIONICS	49	17	35%
PR	SURVIVAL EQUIPMENT	1	1	100%

throughout all aircraft communities. The high NEC commonality in the functional areas of Hydraulics, and Structures reflect the commonality in the types of skills required and maintenance equipment used in these areas, regardless of the type of aircraft supported. The lower levels of NEC commonality in the functional areas of Power Plants, Electrical, and Avionics reflects the diversity in the types of equipment installed in different aircraft types.

B. AUTOMATIC TEST EQUIPMENT

Automatic Test Equipment (ATE) are computer-based test benches used to diagnose the cause of failures and assist the technician in the repair of many avionics components commonly

referred to as Weapons Replaceable Assemblies (WRAs) and Shop Replaceable Assemblies (SRAs). The administrative document that controls ATE is the Tailored Outfitting List (TOL).

Although, the aircraft supported by NAS North Island AIMD and NAS Miramar AIMD differ, a comparison of their respective TOLs showed commonality in automatic test equipment. There are ten different major ATE systems in use at the NAS North Island and NAS Miramar AIMDs, and six are common to both, representing 60% commonality of major ATE between the two AIMDs. Table 7 lists the ATE at both AIMDs and the quantity of each.

Table 7: **NUMBER OF AUTOMATIC TEST EQUIPMENT**

NAME (DESIGNATION)	NORTH ISLAND	MIRAMAR
VAST (AN/USM-247)	6	4
CAT IIID (AN/USM-429(V))	3	4
IMUTS II (AN/USM-608(V))	2	4
EOSTS (AN/AAM-60(V-1))	1	4
EOSTS (AN/AAM-60(V-6))	1	4
NEWTS (AN/USM-458)	0	2
RADCOM (AN/USM-467)	1	4
ATS (AN/USM-470 (V-2))	1	4
HTS (AN/USM-484)	1	2
HATS (AN/USM-403)	3	0

Table 8 summarizes all the Automatic Test Equipment examined by listing the test bench nomenclature and acronym, test bench designation, types of aircraft or systems supported by each test bench, and expected time in service for the bench [Ref. 23].

The TOL also provides an allowance list for the equipment required with the ATE to conduct diagnostic testing of avionics components [Ref 4: p. 8-105]. Most of the ATE used in the Navy have multiple systems applications. ATE applications can be changed to fit a particular aircraft or system through the use of interchangeable Test Program Sets (TPS). Test Program Sets consist of an interconnecting device, which is hardware such as cables, harnesses, special fittings, mounting brackets, or other fixtures that are used to connect the ATE to the failed component being tested. Also included in the Test Program Set are Test Program Disks containing the computer program executed by the ATE in performing diagnostic testing, and a set of Test Program Instructions, which are a set of manual instructions listing technical information for the maintenance technician. Each weapons system or family of weapons systems will have a specific Test Program Set for testing that is done using the applicable type of ATE. For example, with the correct Test Program Sets the Hybrid Test System (HTS, AN/USM-484) can be configured to test a wide variety of components from both F-14 and SH-60B aircraft systems.

Table 8: **AUTOMATIC TEST EQUIPMENT SUMMARY**

NAME	**DESIGNATION**	**SUPPORTS**		**SCHEDULED REPLACEMENT (YEAR)**
		AIRCRAFT	**WRA/SRA/SYS**	
Versatile Avionics Shop Test (VAST)	AN/USM-247	F-14/S-3A	Decoder WRAs	CASS Off-Load
Computer Automatic Tester (CAT IIID)	AN/USM-429(V)	F-14/A-6/E-2C EA-6B/S-3	SRAs	2015+
Inertial Measuring Unit Test System (IMUTS)	AN/USM-608(V)	Multi-Platform	Inertial Navigation	2000+
Electronics Optical Systems Test Set (EOSTS)	AN/AAM-60(V-6)	A-6/S-3A/B	FLIR System	CASS Off-Load
New Electronics Warfare Test Set (NEWTS)	AN/USM-458	Multi-Platform	Electronics Warfare Sys	2015+
Radio/Communications Test Set (RADCOM)	AN/USM-467	F-14/A-6/EA-6 E-2C/SH-60B	Radio & RADAR Sys	None Scheduled
Tailored Mini-VAST (TMV)	AN/USM-470(V2)	F-14/SH-60B	General Avionics Sys	CASS Off-Load
Hybrid Test System (HTS)	AN/USM-484	Multi-Platform	SRAs	None Scheduled
Hybrid Automatic Test Set (HATS)	AN/USM-403	S-3A	SRAs	Partial CASS Off-Load 2000

Analysis of the 2,317 different line items of TPS equipment listed in the individual AIMD's Tailored Outfitting Lists showed 919 items to be common to both AIMDs for a 40% overall commonality.[20] Table 9 summarizes the TPS equipment data by listing the test bench system designation, number of similar TPS equipment and number of peculiar TPS equipment for each type of ATE common to both AIMDs.

Table 9: **TEST PROGRAM SET EQUIPMENT COMMONALITY**

NAME (DESIGNATION)	PECULIAR TPS EQUIP		COMMON TPS EQUIPMENT	TOTAL LINE ITEMS	PERCENT COMMON
	NORTH ISLAND	MIRAMAR			
VAST (AN/USM-247)	444	203	639	1286	50%
CAT IIID (AN/USM- 429(V))	32	233	121	386	31%
IMUTS II (AN/USM-608(V))	0	0	6	6	100%
RADCOM (AN/USM-608(V))	49	95	60	204	29%
ATS (AN/USM-470(V2))*	81	20	53	154	34%
HTS (AN/USM-484)	225	16	40	281	14%
TOTALS	831	567	919	2317	40%

* Does not include Building Blocks

[20]The NAS Miramar and NAS North Island TOLs, both prepared by he Naval Engineering Center (NAEC), were compared by part number o obtain the figures. The part numbers common to both AIMDs were ivided by the total number of different part numbers for both IMDs to determine a percentage of commonality. This procedure was erformed for both individual ATE benches and total part numbers.

The Navy continues to push for broader standardization and versatility in its ATE. The potential for consolidating intermediate level repair capabilities will increase with the introduction of the new multi-application automatic test equipment "CASS". The Consolidated Automated Support System (CASS) program is aimed at creating one basic ATE to take the place of many of the current ATE systems. CASS is designed to use modular components to provide the computer-aided, multi-functional ATE needed to support all Navy electronic testing requirements, ashore and afloat, well into the twenty-first century. Initial fleet deliveries of CASS are scheduled for mid-1994, and the CASS implementation plan covering the period Fiscal Year 1990 through Fiscal Year 1999 requires all new aviation electronic systems to be supported by CASS [Ref. 24]. The schedule for replacement of existing ATE with CASS is based on workload and cost to implement. Those systems in which the workload is small and the cost for developing CASS hardware and software is high will continue to be tested on present systems. Those systems with high failure rates and relatively low CASS transition cost will be off-loaded to CASS. Presently, the systems tested by the AAM-60, ASM-614, HATS, TMV, and VAST test benches are scheduled to be off-loaded to CASS by 1996.[Ref. 25]

C. NALDA DATA

Naval Aviation Logistics Data Analysis (NALDA) collects and stores production data from all Navy aviation maintenance activities. A search of the NALDA database for the time period of July 1990 to June 1991 produced a listing of 10,965 different types of items with either AIMD North Island or AIMD Miramar as the reporting activity. 521 of the items listed in the database had been reported by both AIMDs as having at least one item processed during the reporting period, which is approximately 9% of the 5,724 total types of items reported by North Island AIMD and approximately 10% of the 5241 items reported by Miramar AIMD. Appendix D lists the common items by processing work center,[21] and shows the number of items processed, number made RFI, number BCM'd, and RFI percentage.

There were twenty-three work centers with common workload. Table 10 lists the twenty-three work centers, the number of common items in each, the total number of items processed, the total number of common items processed, and the ratio of the number of common items processed to total items processed[22].

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[21]For items for which the database listed different processing ork centers for each of the AIMDs, the work center with the argest number processed is listed. All items listed for processing y Work Centers 64A, 64B, 64C, or 64D have been listed under 640. ll items listed for processing by any work center in the Precision easuring Equipment/Field Calibration Branch (Avionics Division ranch 670) have been listed under 670.

[22]Miramar does not have a Work Center 940. All common items isted for North Island Work Center 940 were listed as 05A automatic BCM) by Miramar.

Table 10: NUMBER AND PERCENTAGE OF COMMON ITEMS PROCESSED

WORK CENTER	WORK CENTER SPECIALIZATION	NUMBER OF COMMON ITEMS	TOTAL UNITS OF ALL ITEMS PROCESSED		TOTAL UNITS OF COMMON ITEMS PROCESSED		RATIO OF COMMON ITEMS PROCESSED TO TOTAL PROCESSED	
			NORIS	MIRAMAR	NORIS	MIRAMAR	NORIS	MIRAMAR
411	JET ENGINE COMPONENTS	4	733	969	13	32	2%	3%
51A	AIRFRAMES STRUCTURES	8	1043	1753	18	41	2%	2%
51E	TIRE AND WHEEL BUILD-UP	4	1579	4716	273	830	17%	18%
52A	HYDRAULICS	4	670	1880	5	17	1%	1%
52B	BRAKES	2	435	356	10	4	2%	1%
61A	COMMUNICATION EQUIPMENT	76	1575	3090	1130	2150	72%	70%
61B	NAVIGATION	49	1142	1120	395	817	35%	73%
62A	ELECTRICAL SYSTEMS	20	2827	1602	202	253	7%	16%
62B	INSTRUMENTS	37	1303	2015	451	1070	35%	53%
62D	BATTERIES	1	345	520	245	519	71%	100%
62E	CSD\GENERATORS	7	256	698	39	78	15%	11%
62F	INERTIAL NAVIGATION	10	764	1234	247	1234	32%	100%
640	ELECTRONIC COUNTER MEASURES	5	871	788	18	98	2%	12%
65H	TMV MAINTENANCE	1	17	11	1	5	6%	45%
65P	VAST	7	3779	6079	59	36	2%	1%
65Q	VAST STATION MAINTENANCE	26	218	301	156	179	72%	59%
65S	VAST STATION CALIBRATION	18	155	232	155	232	100%	100%
670	PRECISION MEASURING EQUIPMENT	202	4512	3936	1743	2080	39%	53%
69A	ELECTRONIC MODULE TEST	3	3657	7798	8	16	0%	0%
81A	PARACHUTE RIGGING	5	129	676	38	23	29%	3%
81B	SURVIVAL EQUIPMENT	9	607	808	407	607	67%	75%

As Table 10 shows, North Island processed 6295 units of common items, which is 15% of the 41,640 total units processed by North Island during the period covered by the NALDA data. Miramar processed 10,829 units of common items, which is 18% of the total units they processed during the period.

The work centers for which common items represented the majority (50% or more) of the total units processed by at least one of the work centers being compared were: 61A (COMMUNICATIONS); 61B (NAVIGATION); 62B (INSTRUMENTS); 62D (BATTERIES); 62F (INERTIAL NAVIGATION); 65Q (VAST STATION MAINTENANCE); 65S (VAST STATION CALIBRATION); 670 (PRECISION MEASURING EQUIPMENT/FIELD CALIBRATION); 81B (SURVIVAL EQUIPMENT); and 81C (OXYGEN EQUIPMENT). These work centers, with the exception of 65Q and 65S, are considered the prime candidates for consolidation. (Work Centers 65Q and 65S provide direct support for Work Center 65P (VAST), which had a low percentage of commonality and thus is probably not a good candidate for consolidation). In addition, since 800 Division is comprised of Work Centers 81A, 81B and 81C, and since 81B and 81C make up 92% of the total workload of the 800 Division at NAS North Island and 69% at NAS Miramar, the entire 800 Division is considered a consolidation candidate.

The NALDA data also revealed areas where one AIMD is automatically declaring a particular item Beyond Capability of Maintenance while the other AIMD is repairing the same type of item. These "Automatic BCM" items are denoted in Appendix D

by "05A" in the Work Center column. Note, for example, all the items listed for NAS Miramar under Work Center 940. North Island and Miramar could avoid AVDLR funds charges by establishing repair-and-return agreements for all items for which one AIMD has repair capability and the other doesn't. (Currently, the only item listed in Appendix D being repaired on a repair-and-return basis between the two AIMDs is Air Navigation Computer, NIIN 012168096, (Appendix D, line number 443 and 444) [Ref. 26]).

There are also examples of one AIMD having a significently higher RFI rate than the other AIMD. An example is Receiver-Transmitter, NIIN 000431990, (Appendix D, line numbers 55 and 56) for which Miramar had a 89% RFI rate and North Island had a 29% RFI rate during the reporting period. Another example is Receiver Assembly, NIIN 001174118, (Appendix D, line numbers 81 and 82) for which North Island had a 100% RFI rate and Miramar had a 24% RFI rate during the reporting period. These items also present opportunities for AVDLR funds savings through repair-and-return actions.

VII. SUMMARY AND RECOMMENDATIONS

A. SUMMARY

The thesis has discussed the expected benefits and drawbacks of consolidation, options for consolidation, and the areas of commonality between NAS North Island AIMD and NAS Miramar AIMD.

The potential benefits of consolidation include: 1) reduction of manpower; 2) reduction of support equipment; 3) reduction of inventory; 4) improved facilities utilization; and 5) improved productivity. The expected drawbacks of consolidation include: 1) transportation costs; 2) facilities modification costs; 3) impacts to customer service; 4) increased maintenance management and administrative requirements; and 5) reduced military resiliency.

Options for consolidation include: 1) the degree of organizational and service level consolidation; 2) single-siting all consolidated activities at a one AIMD or multi-sited consolidation; and 3) managing consolidated assets on a repair-and-return basis or returning them to the wholesale supply system.

The AIMDs at NAS North Island and NAS Miramar have commonality in manning, Automatic Test Equipment, and types of components repaired. There are four production divisions with

more than 75% commonality in their NECs: Airframes Division (AMH and AMS rates); Ordnance Division (AO rate); Aviation Life Support Systems Division (AME and PR rates); and Support Equipment Division (ASE rate). The Avionics Division has 55% NEC commonality in its AE rating, but only 35% commonality in its AT rating. Power Plants Division (AD rate) has the lowest NEC commonality (27%) of all the production divisions. The two AIMDS operate ten major Automatic Test Equipment systems, and six are common to both. Additionally, the two AIMDs have 40% overall commonality in Test Program Sets equipment. There are 521 types of items that both AIMDs processed during the July 1990 to June 1991 time frame. Avionics Division and Aviation Life Support Systems have workcenters for which common items represent 50% or more of the total items processed by one or both of the work centers examined. These work centers are: 61A (COMMUNICATIONS); 61B (NAVIGATION); 62B (INSTRUMENTS); 62D (BATTERIES); 62F (INERTIAL NAVIGATION); 65Q (VAST MAINTENANCE); 65S (VAST CALIBRATION); 670 (PRECISION MEASURING EQUIPMENT/FIELD CALIBRATION); SURVIVAL EQUIPMENT; and OXYGEN EQUIPMENT.

B. RECOMMENDATIONS

There appears to be potential for consolidation of some of the common capabilities of the AIMDs at NAS North Island and NAS Miramar. However, the following areas require further

research in order to make a determination as to the advisability of consolidation:

1) Present utilization of manpower.

2) Present utilization of support equipment.

3) Present utilization of existing facilities.

4) Modifications to facilities required to handle consolidated workload.

5) Change to repairable item inventory (pool) requirements caused by increased turnaround time.

6) Consumable repair parts inventory to be consolidated.

7) Affects on handling and warehousing requirements.

8) Costs to transfer personnel.

9) Effects upon O-level operations.

10) Changes to funding procedures.

11) Changes to supply procedures.

12) Distribution of work load between day shift and night shift.

13) Forecasted changes to workload, manning, support equipment, and facilities.

14) Areas with little or no commonality in the exact types of components repaired which may nonetheless produce benefits if consolidated. Suggested areas to research are Tire and Wheel Build-up, Hydraulics, CAT IIID, Tailored Mini-VAST, RADCOM, and Armament Equipment repair.

The types of aircraft supported by the AIMDs at NAS North Island and NAS Miramar represent a wide cross-section of the different types of missions that Navy aircraft perform: North Island AIMD supports both fixed wing and rotory wing aircraft performing anti-submarine warfare and cargo delivery, and Miramar AIMD supports fighter and airborne early warning aircraft. Additionally, the two AIMDs together support 9 out of the 13 different types of aircraft supported by AIMDs nationwide. The fact that North Island and Miramar have high degrees of component repair commonality in specific areas despite the wide diversity of aircraft they support suggests that there may be areas of high commonality throughout all AIMDs. Accordingly, the authors recommend that the other collocated AIMDs listed in Table 1 conduct analyses to determine areas with consolidation potential and/or opportunities for establishing repair-and-return agreements for those items being repaired by one AIMD and declared BCM by another.

APPENDIX A

PRODUCTIVITY IMPROVEMENTS OF CONSOLIDATION

STORM DATA SET LISTING
DETAILED PROBLEM DATA LISTING FOR
CONSOLIDATION

ROW LABEL	NO.	ISLAND	MIRAMAR	CONSOLIDAT
# SERVERS		4	5	9
SOURCE POP		FIN	FIN	FIN
ARR RATE		1.	1.	1.
SERV DIST		EXP	EXP	EXP
SERV TIME		0.1	0.1	0.1
SERV STD		.	.	.
WAIT CAP		.	.	.
# CUSTMERS		40	50	90
WAIT COST		.	.	.
COST/SERV		.	.	.
LOSTCUST C		.	.	.

NO. ISLAND : M / M / C / K / K
Q U E U E   S T A T I S T I C S

Number of identical servers	4
Mean arrival rate per customer	1.0000
Mean service rate per server	10.0000
Size of the source population	40
Mean server utilization (%)	85.7745
Expected number of customers in queue	2.2592
Expected number of customers in system . . .	5.6902
Probability that a customer must wait	0.6889
Expected time in the queue	0.0658
Expected time in the system	0.1658

MIRAMAR : M / M / C / K / K
Q U E U E   S T A T I S T I C S

Number of identical servers	5
Mean arrival rate per customer	1.0000
Mean service rate per server	10.0000
Size of the source population	50
Mean server utilization (%)	86.5433
Expected number of customers in queue	2.4012
Expected number of customers in system . . .	6.7284
Probability that a customer must wait	0.6696
Expected time in the queue	0.0555
Expected time in the system	0.1555

CONSOLIDAT : M / M / C / K / K
Q U E U E   S T A T I S T I C S

Number of identical servers	9
Mean arrival rate per customer	1.0000
Mean service rate per server	10.0000
Size of the source population	90
Mean server utilization (%)	88.1628
Expected number of customers in queue	2.7189
Expected number of customers in system . . .	10.6535
Probability that a customer must wait	0.6111
Expected time in the queue	0.0343
Expected time in the system	0.1343

APPENDIX B

NEC COMMONALITY
of
NAS NORTH ISLAND and NAS MIRAMAR
AIRCRAFT INTERMEDIATE MAINTENANCE DEPARTMENTS

E	PNEC	PRINCIPLE NEC SPECIALIZATION	MIRAMAR	NORIS
		GENERAL POWER PLANTS	15	15
	6410	F-110 TURBOFAN FIRST DEGREE REPAIR	8	
	6415	TF -30 TURBOFAN FIRST DEGREE REPAIR	96	
	6416	J-52 TURBOJET FIRST DEGREE REPAIR	16	
	6419	T-58 TURBOSHAFT FIRST DEGREE REPAIR		31
	6421	TF-34 TURBOFAN FIRST DEGREE REPAIR		38
	6422	JET TEST CELL OPERATOR	7	8
	6423	T-56-425/426 TURBOPROP ENGINE & PROP	10	2
	6426	T-700 TURBOSHAFT FIRST DEGREE REPAIR		14
	6428	HELICOPTER ROTORS & RELATED COMPONENTS		3
	6429	TURBOSHAFT/PROP TEST CELL OPERATOR	1	
		AD TOTAL:	153	111
		GENERAL AIRCRAFT ELECTRICAL	30	16
	7105	ATTITUDE REFERENCE HEADING SYSTEM TECH	8	1
	7129	F-14 EMATS TECH	12	
	7131	POWER GENERATING SYSTEMS TECH	8	11
	7137	AIRCRAFT INSTRUMENTS TECH	5	15
	7144	HELICOPTER ASE/AFCS TECH		19
	7166	ENGINE TEST CELL ELECTRICIAN	4	4
	7173	ASM-175 ELECTRONIC MODULE TEST CONSOLE	12	
	7174	AFCS/ADC/INS/DRS & MINI-SACE GT-4	7	
	7175	P-3/C-130/E-2/C-2 ELECTRICAL COMPONENTS		1
	7197	ASM-608 IMU TEST SET MAINTENANCE TECH	27	11
		AE TOTAL:	113	78
		GENERAL SAFETY EQUIPMENT	5	2
		AME TOTAL:	5	2
		GENERAL HYDRAULICS	7	12
	7212	STATIONARY HYDRAULICS TEST STAND OPERATOR	23	31
		AMH TOTAL:	30	43

RATE	PNEC	PRINCIPLE NEC SPECIALIZATION	MIRAMAR	NORI
AMS		GENERAL STRUCTURES	31	
AMS	7222	INERT-GAS ARC-WELDER	2	
AMS	7223	AIRCRAFT & ENGINE COMPONENT WELDER	5	
AMS	7225	NONDESTRUCTIVE INSPECTION TECH	3	
AMS	7232	STRUCTURAL REPAIR TECH	14	
		AMS TOTAL:	55	
AO		GENERAL ORDNANCE EQUIPMENT	6	
AO	6802	STRIKE I-LEVEL ARMAMENT MAINTENANCE	26	
		AO TOTAL:	32	
AS		GENERAL SUPPORT EQUIPMENT	6	
AS	7601	SUPPORT EQUIPMENT CRYOGENIC MECH	5	
AS	7602	SE MOBILE ELECTRIC POWER PLANTS MECH	15	
AS	7603	SE AIR CONDITIONING TECH	1	
AS	7606	SE GAS TURBINE MECHANIC	8	
AS	7607	SE MECHANIC	15	
AS	7608	SE HYDRAULIC TECHNICIAN	16	
AS	7609	SE MAINTENANCE MANAGER	4	
		AS TOTAL:	70	
AT		GENERAL AVIONICS	25	
AT	1588	ELECTRONIC TEST SET CALIBRATION	2	
AT	6522	AKT-22 DATA LINK TECH		
AT	6526	ANTISUBMARINE WARFARE TECH		
AT	6527	AIRBORNE SONAR TECH		
AT	6529	SONOBUOY RECEIVER & RECORDER TECH		
AT	6602	VHF COMMUNICATIONS EQUIPMENT TECH	1	
AT	6605	RADAR ALTIMETER EQUIPMENT TECH	11	
AT	6606	DOPPLER RADAR NAVIGATION TECH		
AT	6607	DIGITAL DATA LINK COMMUNICATIONS TECH	10	
AT	6608	NAVIGATION COMPUTER TECH	1	
AT	6609	ELECTRONIC IDENTIFICATION (IFF) TECH	7	
AT	6611	UHF, ADF, & ICS TECH	17	
AT	6612	TACAN/RADIO NAVIGATION TECH	13	
AT	6613	HF COMMUNICATIONS TECH		
AT	6614	APS-116 TECH		
AT	6618	USM-458 TECH	12	
AT	6619	HATS (USM-403) OPERATOR		
AT	6621	APS-125 RADAR TECH	14	
AT	6623	CI ASA-27 SACE TEST BENCH TECH	2	
AT	6625	USM-449(V) AAI & 5500 SERIES ATE TECH		

PNEC	PRINCIPLE NEC SPECIALIZATION	MIRAMAR	NORIS
6626	CD CP-413/ASA-27A SACE TEST BENCH TECH	2	
6628	HATS (USM-403) MAINTENANCE TECH		7
6633	USM-467 RADCOM TECH	15	5
6634	COMMUNICATIONS SECURITY DEVICES TECH	6	6
6638	AAD-5 TECH	7	
6639	COUNTERMEASURES EQUIPMENT TECH	7	
6641	ALQ-126 ECM TECH	1	
6646	ALQ-91/108 DECM TECH	7	
6650	AN/USM-470 ATS TECH		5
6651	ASM-347 SACE PROGRAMMER/MAINTAINER	2	
6652	VAST (USM-247(V)) OPERATOR	19	23
6653	VAST ON-LINE MAINTENANCE TECH	19	5
6658	AN/USM-470(V)1 ATS ON-LINE MAINT TECH		1
6659	VAST TEST PROGRAM SET ANALYST	8	10
6660	DYNAMIC ALIGNMENT TEST SET TECH		3
6663	VAST OFF-LINE MAINTENANCE/CALIBRATION	5	3
6673	FIELD CALIBRATION ACTIVITY TECH	10	17-
6684	AAM-60(V)6 EOST TECH		1
6686	USM-429 CAT IIID MAINTENANCE TECH	15	5
6688	USM-484 HYBRID TEST SET (HTS) MAINT TECH		3
6694	USM-470(V)2 ATS ON-LINE MAINTENANCE TECH	6	6
7173	ASM-175 EMTC TECH	1	
7959	FLIR SYSTEMS TECH		7
7984	AWG-9/AWM-23 RADIO FREQ TEST CONSOLE TECH	24	
7988	AWG-9/AWM-23 LOW FREQ TEST STATION TECH	15	
7989	AWG-9/AWM-23 COMPUTER TEST STATION TECH	14	
7991	AWG-9/AWM-23 CONTROLS/DISPLAYS TECH	11	
7992	AWG-9/AWM-23 MODULE TEST STATION TECH	13	
	AT TOTAL:	322	289
	SURVIVAL EQUIPMENT	28	33
	PR TOTAL:	28	33
	TOTAL FOR ALL PRODUCTION RATES:	808	708

APPENDIX C

COMMON COMPONENT WEIGHT AND CUBE

Data Sources: 1. Naval Aviation Logistics Data Analysis(NALDA)
2. MIL-STD-726 Packaging Data Program, Version CD1*

Legend:
NIIN = National Item Identification Number
NOMEN = Nomenclature
AIMD = Aircraft Intermediate Maintenance Department
PROC = Number of items processed
WT = Maximum Package Weight (lbs)
CU = Maximum Cube Size of Package (cu.ft.)
AWT = Average Weight (PROC/250 days X WT)
ACU = Average Cubes (PROC/250 days X CU)
NR = No weight or cube information recorded in Database

Note:Blank weight and cube, indicate component repair site.

NIIN	NOMEN	AIMD	PROC	WT	CU	AWT	
Work Center 411							
009688188	HEATER ASSEMBLY,FUE	NORIS	1			0.000	0.
009688188	HEATER ASSEMBLY,FUE	MIR	1	11	0.521	0.044	0.
009699669	VALVE,AIR SHUT OFF	NORIS	7	5	0.289	0.140	0.
009699669	VALVE,AIR SHUT OFF	MIR	11			0.000	0.
010389302	VALVE,SOLENOID	NORIS	2	5	0.174	0.040	0.
010389302	VALVE,SOLENOID	MIR	13			0.000	0.
010621642	COWL ASSEMBLY	NORIS	2	135	45.7	1.080	0.
010621642	COWL ASSEMBLY	MIR	7			0.000	0.
	AVERAGE TRANSFERED PER DAY:					1.304	0.
WORK CENTER 51A							
000666325	FLAP,COOLER E,IT	NORIS	4	7	2.4	0.112	0.
000666325	FLAP,COOLER E,IT	MIR	19			0.000	0.
003952547	DOOR,LANDING GEAR,A	NORIS	1	56.8	23.3	0.227	0.
003952547	DOOR,LANDING GEAR,A	MIR	1			0.000	0.
003952550	DOOR,LANDING GEAR,A	NORIS	1	56.8	23.3	0.227	0.
003952550	DOOR,LANDING GEAR,A	MIR	7			0.000	0.
007995192	TUBE,TORQUE,INBOARD	NORIS	1	NR	NR	0.000	0.
007995192	TUBE,TORQUE,INBOARD	MIR	1	NR	NR	0.000	0.
009686614	LIMITER,LOAD	NORIS	3	1.2	0.087	0.014	0.
009686614	LIMITER,LOAD	MIR	6			0.000	0.

N	NOMEN	AIMD	PROC	WT	CU	AWT	ACU
439782	COWLING ASSEMBLY	NORIS	5			0.000	0.000
439782	COWLING ASSEMBLY	MIR	1	101	34.4	0.404	0.138
707965	DOOR ASSEMBLY,WING	NORIS	1	NR	NR	0.000	0.000
707965	DOOR ASSEMBLY,WING	MIR	1	NR	NR	0.000	0.000
898798	MOUNT,DYNAFOCAL	NORIS	2	16	0.706	0.128	0.006
898798	MOUNT,DYNAFOCAL	MIR	5			0.000	0.000
	AVERAGE TRANSFERED PER DAY:					1.113	0.369
K CENTER 51E							
836213	WHEEL,LANDING GEAR	NORIS	82	16	0.706	5.248	0.232
836213	WHEEL,LANDING GEAR	MIR	301			0.000	0.000
795065	RIM,WHEEL,PNEUMATIC	NORIS	121	NR	NR	0.000	0.000
795065	RIM,WHEEL,PNEUMATIC	MIR	230	NR	NR	0.000	0.000
613729	WHEEL,LANDING GEAR	NORIS	69	202	5	55.752	1.380
613729	WHEEL,LANDING GEAR	MIR	295			0.000	0.000
943044	TIRE,PNEUMATIC	NORIS	1	NR	NR	0.000	0.000
943044	TIRE,PNEUMATIC	MIR	4	NR	NR	0.000	0.000
	AVERAGE TRANSFERED PER DAY:					61.000	1.612
K CENTER 52A							
215577	VALVE,REGULATING,FL	NORIS	1			0.000	0.000
215577	VALVE,REGULATING,FL	MIR	4	1.44	0.069	0.023	0.001
252475	CYLINDER ASSEMBLY,A	NORIS	1	101	5.5	0.404	0.022

N	NOMEN	AIMD	PROC	WT	CU	AWT	ACU
252475	CYLINDER ASSEMBLY,A	MIR	3			0.000	0.000
384410	VALVE,LINEAR,DIRECT	NORIS	1	3	0.115	0.012	0.000
384410	VALVE,LINEAR,DIRECT	MIR	2			0.000	0.000
123104	PUMP,AXIAL PISTONS	NORIS	2	35.3	0.706	0.282	0.006
123104	PUMP,AXIAL PISTONS	MIR	8			0.000	0.000
	AVERAGE TRANSFERED PER DAY:					0.721	0.029
K CENTER 52B							
522743	BRAKE,MULTIPLE DISK	NORIS	9			0.000	0.000
522743	BRAKE,MULTIPLE DISK	MIR	3	102	2.5	1.224	0.030
218031	HOUSING,BRAKE,AIRCR	NORIS	1	NR	NR	0.000	0.000
218031	HOUSING,BRAKE,AIRCR	MIR	1	NR	NR	0.000	0.000

NIIN	NOMEN	AIMD	PROC	WT	CU	AWT	
	AVERAGE TRANSFERED PER DAY:					1.224	0.
WORK CENTER 61A							
000000120	MOUNTING BASE,ELECT	NORIS	1	10	1.1	0.040	0.
000000120	MOUNTING BASE,ELECT	MIR	1			0.000	0.
000085602	CONTROL,INTERCOMMUN	NORIS	2	23.8	2.4	0.190	0.
000085602	CONTROL,INTERCOMMUN	MIR	14			0.000	0.
000150436	AMPLIFIER,RADIO FRE	NORIS	4	1.2	0.087	0.019	0.
000150436	AMPLIFIER,RADIO FRE	MIR	8			0.000	0.
000214742	POWER SUPPLY	NORIS	1	2.84	0.115	0.011	0.
000214742	POWER SUPPLY	MIR	1			0.000	0.
000431987	AMPLIFIER-OSCILLATO	NORIS	4	1.94	0.087	0.031	0.
000431987	AMPLIFIER-OSCILLATO	MIR	12			0.000	0.
000431990	RECEIVER-TRANSMITTE	NORIS	7	3.2	0.174	0.090	0.
000431990	RECEIVER-TRANSMITTE	MIR	9			0.000	0.
000504288	AMPLIFIER,RADIO FRE	NORIS	3	2.84	0.174	0.034	0.
000504288	AMPLIFIER,RADIO FRE	MIR	20			0.000	0.
000565487	AMPLIFIER,INTERMEDI	NORIS	2	1.94	0.069	0.016	0.
000565487	AMPLIFIER,INTERMEDI	MIR	3			0.000	0.
000592726	AMPLIFIER-RELAY ASS	NORIS	9	20	2	0.720	0.
000592726	AMPLIFIER-RELAY ASS	MIR	14			0.000	0.
000681555	RECEIVER-TRANSMITTE	NORIS	37	28	3.2	4.144	0.
000681555	RECEIVER-TRANSMITTE	MIR	63			0.000	0.
000894403	CONTROL,TRANSPONDER	NORIS	2	7	0.231	0.056	0.
000894403	CONTROL,TRANSPONDER	MIR	13			0.000	0.
000897179	RECEIVER-TRANSMITTE	NORIS	1	28	3.2	0.112	0.
000897179	RECEIVER-TRANSMITTE	MIR	6			0.000	0.
000898034	POWER SUPPLY	NORIS	18	8.5	1.3	0.612	0.
000898034	POWER SUPPLY	MIR	31			0.000	0.
001007931	RADIO SET	NORIS	4	45.2	5.3	0.723	0.
001007931	RADIO SET	MIR	5			0.000	0.
001096110	ELECTRONIC SWITCH	NORIS	2	1	0.174	0.008	0.
001096110	ELECTRONIC SWITCH	MIR	3			0.000	0.
001151029	CIRCUIT CARD ASSEMB	NORIS	2	1	0.231	0.008	0.
001151029	CIRCUIT CARD ASSEMB	MIR	4			0.000	0.
001151032	CIRCUIT CARD ASSEMB	NORIS	2	1	0.231	0.008	0.
001151032	CIRCUIT CARD ASSEMB	MIR	12			0.000	0.
001151035	CIRCUIT CARD ASSEMB	NORIS	1	1	0.069	0.004	0.
001151035	CIRCUIT CARD ASSEMB	MIR	1			0.000	0.
001174118	RECEIVER ASSEMBLY	NORIS	6	6.3	1.3	0.151	0.
001174118	RECEIVER ASSEMBLY	MIR	17			0.000	0.
001174257	CAVITY,TUNED	NORIS	1	1	0.174	0.004	0.
001174257	CAVITY,TUNED	MIR	1			0.000	0.
001339179	CONTROL,INTERROGATO	NORIS	1	5	0.405	0.020	0.
001339179	CONTROL,INTERROGATO	MIR	1			0.000	0.

N	NOMEN	AIMD	PROC	WT	CU	AWT	ACU
346240	RECEIVER-TRANSMITTE	NORIS	12	70.1	4.4	3.365	0.211
346240	RECEIVER-TRANSMITTE	MIR	136			0.000	0.000
401775	RECEIVER-TRANSMITTE	NORIS	14	18	1.9	1.008	0.106
401775	RECEIVER-TRANSMITTE	MIR	77			0.000	0.000
407843	CIRCUIT CARD ASSEMB	NORIS	2	3	0.231	0.024	0.002
407843	CIRCUIT CARD ASSEMB	MIR	8			0.000	0.000
407844	CIRCUIT CARD ASSEMB	NORIS	2			0.000	0.000
407844	CIRCUIT CARD ASSEMB	MIR	1	3.8	0.347	0.015	0.001
407845	RADIO FREQUENCY SUB	NORIS	11			0.000	0.000
407845	RADIO FREQUENCY SUB	MIR	39			0.000	0.000
407847	CIRCUIT CARD ASSEMB	NORIS	3	3	0.231	0.036	0.003
407847	CIRCUIT CARD ASSEMB	MIR	6			0.000	0.000
453218	CIRCUIT CARD ASSEMB	NORIS	1	3	0.231	0.012	0.001
453218	CIRCUIT CARD ASSEMB	MIR	9			0.000	0.000
491319	RECEIVER-TRANSMITTE	NORIS	50	53.2	5.3	10.640	1.060
491319	RECEIVER-TRANSMITTE	MIR	81			0.000	0.000
602136	BEACON SET,RADIO	NORIS	105	2	0.069	0.840	0.029
602136	BEACON SET,RADIO	MIR	162			0.000	0.000
602198	RECEIVER-TRANSMITTE	NORIS	33	28	3.2	3.696	0.422
602198	RECEIVER-TRANSMITTE	MIR	98			0.000	0.000
677585	CONTROL,INTERROGATO	NORIS	7	3	0.579	0.084	0.016
677585	CONTROL,INTERROGATO	MIR	34			0.000	0.000
688797	RECEIVER-TRANSMITTE	NORIS	5	28	3.2	0.560	0.064
688797	RECEIVER-TRANSMITTE	MIR	5			0.000	0.000
773543	RECEIVER-TRANSMITTE	NORIS	1			0.000	0.000
773543	RECEIVER-TRANSMITTE	MIR	1	127	24	0.508	0.096
849487	ELECTRONIC COMPONEN	NORIS	1			0.000	0.000
849487	ELECTRONIC COMPONEN	MIR	1	6.6	1	0.026	0.004
863013	CONTROL,INTERCOMMUN	NORIS	1	23.3	2.4	0.093	0.010
863013	CONTROL,INTERCOMMUN	MIR	15			0.000	0.000
722560	AMPLIFIER,AUDIO FRE	NORIS	1	3.6	0.347	0.014	0.001
722560	AMPLIFIER,AUDIO FRE	MIR	2			0.000	0.000
713174	TEST SET,TRANSPONDE	NORIS	15	17.7	1.6	1.062	0.096
713174	TEST SET,TRANSPONDE	MIR	18			0.000	0.000
815003	CIRCUIT CARD ASSEMB	NORIS	2	3	0.231	0.024	0.002
815003	CIRCUIT CARD ASSEMB	MIR	3			0.000	0.000
051884	CIRCUIT CARD ASSEMB	NORIS	20			0.000	0.000
051884	CIRCUIT CARD ASSEMB	MIR	49	2.34	0.231	0.459	0.045
662959	CIRCUIT CARD ASSEMB	NORIS	1	NR	NR	0.000	0.000
662959	CIRCUIT CARD ASSEMB	MIR	2	NR	NR	0.000	0.000
674544	ELECTRONIC COMPONEN	NORIS	2	1.5	0.087	0.012	0.001
674544	ELECTRONIC COMPONEN	MIR	5			0.000	0.000
674548	CONTROL,RECEIVER-TR	NORIS	6			0.000	0.000
674548	CONTROL,RECEIVER-TR	MIR	7	3	0.289	0.084	0.008
674549	AMPLIFIER,RADIO FRE	NORIS	7	3	0.289	0.084	0.008
674549	AMPLIFIER,RADIO FRE	MIR	25			0.000	0.000
385992	CONTROL,RADIO SET	NORIS	6			0.000	0.000

NIIN	NOMEN	AIMD	PROC	WT	CU	AWT	
007385992	CONTROL,RADIO SET	MIR	1	4.8	0.405	0.019	0
007635947	AMPLIFIER,RADIO FRE	NORIS	1	2.6	0.174	0.010	0
007635947	AMPLIFIER,RADIO FRE	MIR	7			0.000	0
007635948	RECEIVER,RADIO	NORIS	1	1.4	0.087	0.006	0
007635948	RECEIVER,RADIO	MIR	5			0.000	0
007820844	CONTROL,TRANSPONDER	NORIS	7			0.000	0
007820844	CONTROL,TRANSPONDER	MIR	5	7	0.231	0.140	0
007825308	RADIO SET	NORIS	542	2	0.174	4.336	0
007825308	RADIO SET	MIR	408			0.000	0
007862306	RECEIVER TRANSMI	NORIS	4	70.1	4.4	1.122	0
007862306	RECEIVER TRANSMI	MIR	62			0.000	0
008100136	SYNCHRONIZER,ELECTR	NORIS	14	15.2	2	0.851	0
008100136	SYNCHRONIZER,ELECTR	MIR	53			0.000	0
008100140	SWITCH-AMPLIFIER	NORIS	8	40.3	3.2	1.290	0
008100140	SWITCH-AMPLIFIER	MIR	68			0.000	0
008100189	RECEIVER-TRANSMITTE	NORIS	2			0.000	0
008100189	RECEIVER-TRANSMITTE	MIR	1	66.2	8.5	0.265	0
008488407	CASE ASSEMBLY,RF	NORIS	4	4.1	0.231	0.066	0
008488407	CASE ASSEMBLY,RF	MIR	10			0.000	0
008601410	CONTROL,TRANSPONDER	NORIS	2	7	0.231	0.056	0
008601410	CONTROL,TRANSPONDER	MIR	3			0.000	0
008954446	TEST SET,TRANSPONDE	NORIS	16	7	1.3	0.448	0
008954446	TEST SET,TRANSPONDE	MIR	21			0.000	0
009007994	CONTROL,RADIO SET	NORIS	1	6	0.347	0.024	0
009007994	CONTROL,RADIO SET	MIR	24			0.000	0
009290904	RECEIVER,RADIO	NORIS	1	1.44	0.046	0.006	0
009290904	RECEIVER,RADIO	MIR	1			0.000	0
009332825	CONTROL,INTERCOMMUN	NORIS	4	5	0.347	0.080	0
009332825	CONTROL,INTERCOMMUN	MIR	17			0.000	0
009509135	CONTROL UNIT	NORIS	1	NR	NR	0.000	0
009509135	CONTROL UNIT	MIR	1	NR	NR	0.000	0
010130826	RECEIVER-TRANSMITTE	NORIS	5			0.000	0
010130826	RECEIVER-TRANSMITTE	MIR	1	12.5	1.5	0.050	0
010184240	RECEIVER-TRANSMITTE	NORIS	17	29.5	3	2.006	0
010184240	RECEIVER-TRANSMITTE	MIR	57			0.000	0
010213503	CONTROL,RADIO SET	NORIS	1	23.8	2.4	0.095	0
010213503	CONTROL,RADIO SET	MIR	61			0.000	0
010258697	CIRCUIT CARD ASSEMB	NORIS	4			0.000	0
010258697	CIRCUIT CARD ASSEMB	MIR	20	2	0.231	0.160	0
010401531	CASE ASSEMBLY	NORIS	5	4.1	0.231	0.082	0
010401531	CASE ASSEMBLY	MIR	16			0.000	0
010414622	RECEIVER-TRANSMITTE	NORIS	22	70.1	4.4	6.169	0
010414622	RECEIVER-TRANSMITTE	MIR	110			0.000	0
010436602	CIRCUIT CARD ASSEMB	NORIS	3			0.000	0
010436602	CIRCUIT CARD ASSEMB	MIR	1	3	0.231	0.012	0
010447010	CIRCUIT CARD ASSEMB	NORIS	1	3	0.231	0.012	0
010447010	CIRCUIT CARD ASSEMB	MIR	2			0.000	0

N	NOMEN	AIMD	PROC	WT	CU	AWT	ACU
449970	CIRCUIT CARD AS	NORIS	2			0.000	0.000
449970	CIRCUIT CARD AS	MIR	1	3	0.231	0.012	0.001
458544	CIRCUIT CARD ASSEMB	NORIS	1	3	0.231	0.012	0.001
458544	CIRCUIT CARD ASSEMB	MIR	1			0.000	0.000
962977	POWER SUPPLY	NORIS	7	18	3.2	0.504	0.090
962977	POWER SUPPLY	MIR	20			0.000	0.000
963727	RECEIVER-TRANSMITTE	NORIS	17	66.2	8.5	4.502	0.578
963727	RECEIVER-TRANSMITTE	MIR	75			0.000	0.000
170348	POWER AMPLIFIER	NORIS	2	3	0.231	0.024	0.002
170348	POWER AMPLIFIER	MIR	10			0.000	0.000
364372	CONTROL,INTERCOMMUN	NORIS	1	3	0.231	0.012	0.001
364372	CONTROL,INTERCOMMUN	MIR	4			0.000	0.000
790560	PROCESSOR	NORIS	3			0.000	0.000
790560	PROCESSOR	MIR	1	2.5	0.231	0.010	0.001
033480	RECEIVER-TRANSMITTE	NORIS	13	41.9	4.6	2.179	0.239
033480	RECEIVER-TRANSMITTE	MIR	60			0.000	0.000

AVERAGE TRANSFERED PER DAY: 54.206 5.342

K CENTER 61B

580338	RECEIVER-TRANSMITTE	NORIS	1			0.000	0.000
580338	RECEIVER-TRANSMITTE	MIR	3	25	2.3	0.300	0.028
509068	CIRCUIT CARD ASSEMB	NORIS	3			0.000	0.000
509068	CIRCUIT CARD ASSEMB	MIR	5	0.94	0.115	0.019	0.002
718651	CIRCUIT CARD ASSEMB	NORIS	1	2	0.231	0.008	0.001
718651	CIRCUIT CARD ASSEMB	MIR	1			0.000	0.000
740966	CIRCUIT CARD ASSEMB	NORIS	5			0.000	0.000
740966	CIRCUIT CARD ASSEMB	MIR	2	1	0.115	0.008	0.001
744112	POWER SUPPLY	NORIS	12			0.000	0.000
744112	POWER SUPPLY	MIR	2	3	0.174	0.024	0.001
100938	CONVERTER,SIGNAL DA	NORIS	39	26	4.5	4.056	0.702
100938	CONVERTER,SIGNAL DA	MIR	70			0.000	0.000
101019	RECEIVER,RADAR	NORIS	4	25.8	2.4	0.413	0.038
101019	RECEIVER,RADAR	MIR	17			0.000	0.000
108125	RECEIVER-TRANSMITTE	NORIS	2	25	1.6	0.200	0.013
108125	RECEIVER-TRANSMITTE	MIR	28			0.000	0.000
387747	RECEIVER,RADIO	NORIS	1	9.6	0.521	0.038	0.002
387747	RECEIVER,RADIO	MIR	7			0.000	0.000
387767	DECODER,PULSE	NORIS	1	20	2.6	0.080	0.010
387767	DECODER,PULSE	MIR	7			0.000	0.000
462276	CONTROL,NAVIGATION	NORIS	15	6.6	0.405	0.396	0.024
462276	CONTROL,NAVIGATION	MIR	66			0.000	0.000
473199	RECEIVER-TRANSMITTE	NORIS	3	21	3.1	0.252	0.037
473199	RECEIVER-TRANSMITTE	MIR	8			0.000	0.000
485988	DECODER,PULSE	NORIS	1	20	2.6	0.080	0.010
485988	DECODER,PULSE	MIR	5			0.000	0.000

NIIN	NOMEN	AIMD	PROC	WT	CU	AWT	
001485989	CONTROL,RECEIVER	NORIS	1	3	0.231	0.012	0.
001485989	CONTROL,RECEIVER	MIR	7			0.000	0.
001486170	CIRCUIT CARD ASSEMB	NORIS	1	3	0.347	0.012	0.
001486170	CIRCUIT CARD ASSEMB	MIR	3			0.000	0.
001525089	AMPLIFIER,POWER	NORIS	18	14	0.706	1.008	0.
001525089	AMPLIFIER,POWER	MIR	31			0.000	0.
001631981	COMPUTER,RANGE	NORIS	1			0.000	0.
001631981	COMPUTER,RANGE	MIR	1	9	0.706	0.036	0.
001683630	CONVERTER-RECEIVER	NORIS	12			0.000	0.
001683630	CONVERTER-RECEIVER	MIR	7	5	0.521	0.140	0.
001683631	CONTROL,COMMUNICATI	NORIS	4	6	0.845	0.096	0.
001683631	CONTROL,COMMUNICATI	MIR	22			0.000	0.
001687813	RECEIVER-TRANSMITTE	NORIS	3			0.000	0.
001687813	RECEIVER-TRANSMITTE	MIR	1	25	1.6	0.100	0.
001687820	RECEIVER,RADAR	NORIS	1	25.8	2.4	0.103	0.
001687820	RECEIVER,RADAR	MIR	2			0.000	0.
001688765	CONVERTER,SIGNAL DA	NORIS	4			0.000	0.
001688765	CONVERTER,SIGNAL DA	MIR	2	26	4.5	0.208	0.
001688769	RECEIVER-TRANSMITTE	NORIS	64	63	5.3	16.128	1.
001688769	RECEIVER-TRANSMITTE	MIR	138			0.000	0.
001688770	MOUNTING BASE,ELECT	NORIS	3	10.75	2.2	0.129	0.
001688770	MOUNTING BASE,ELECT	MIR	7			0.000	0.
001688771	CONTROL,NAVIGATION	NORIS	3	2.5	0.463	0.030	0.
001688771	CONTROL,NAVIGATION	MIR	5			0.000	0.
001688856	CONTROL,RECEIVER	NORIS	2	3	0.231	0.024	0.
001688856	CONTROL,RECEIVER	MIR	9			0.000	0.
004917513	RECEIVER,RADIO	NORIS	1	9.6	0.521	0.038	0.
004917513	RECEIVER,RADIO	MIR	18			0.000	0.
004917514	DECODER,PULSE	NORIS	5	20	2.6	0.400	0.
004917514	DECODER,PULSE	MIR	15			0.000	0.
006500503	ANTENNA	NORIS	30	20	1.9	2.400	0.
006500503	ANTENNA	MIR	17			0.000	0.
006887618	MODULE,RANGE	NORIS	1			0.000	0.
006887618	MODULE,RANGE	MIR	1	1	0.017	0.004	0.
007384906	AMPLIFIER	NORIS	1			0.000	0.
007384906	AMPLIFIER	MIR	1	2	0.017	0.008	0.
008490055	ANTENNA	NORIS	14			0.000	0.
008490055	ANTENNA	MIR	1	20	1.9	0.080	0.
009289330	MODULE ASSY,RANGE	NORIS	1	2.84	0.174	0.011	0.
009289330	MODULE ASSY,RANGE	MIR	11			0.000	0.
009289335	MODULE ASSY	NORIS	4	15	1.4	0.240	0.
009289335	MODULE ASSY	MIR	39			0.000	0.
009289373	DECODER,RANGE	NORIS	2	4.6	0.174	0.037	0.
009289373	DECODER,RANGE	MIR	4			0.000	0.
009331802	INDICATOR,HEIGHT	NORIS	23			0.000	0.
009331802	INDICATOR,HEIGHT	MIR	4	2.67	0.115	0.043	0.
009763353	MODULE ASSEMBLY,RF	NORIS	2			0.000	0.

N	NOMEN	AIMD	PROC	WT	CU	AWT	ACU
763353	MODULE ASSEMBLY,RF	MIR	1	15	1.4	0.060	0.006
121920	CONTROL,RECEIVER-TR	NORIS	1			0.000	0.000
121920	CONTROL,RECEIVER-TR	MIR	2	22.6	2.4	0.181	0.019
121938	RECEIVER-TRANSMITTE	NORIS	29			0.000	0.000
121938	RECEIVER-TRANSMITTE	MIR	12	59	5.3	2.832	0.254
124864	ADAPTER,RECEIVER-TR	NORIS	2	12	1.8	0.096	0.014
124864	ADAPTER,RECEIVER-TR	MIR	10			0.000	0.000
823534	RECEIVER-TRANSMITTE	NORIS	5	84.9	7.7	1.698	0.154
823534	RECEIVER-TRANSMITTE	MIR	140			0.000	0.000
831400	RECEIVER-TRANSMITTE	NORIS	3	84.9	7.7	1.019	0.092
831400	RECEIVER-TRANSMITTE	MIR	7			0.000	0.000
831401	RECEIVER-TRANSMITTE	NORIS	8	84.9	7.7	2.717	0.246
831401	RECEIVER-TRANSMITTE	MIR	14			0.000	0.000
874423	RECEIVER-TRANSMITTE	NORIS	15			0.000	0.000
874423	RECEIVER-TRANSMITTE	MIR	26	25	1.6	2.600	0.166
876196	RECEIVER-TRANSMITTE	NORIS	1	28	1.6	0.112	0.006
876196	RECEIVER-TRANSMITTE	MIR	17			0.000	0.000
047188	RECEIVER TRANSMITTE	NORIS	21			0.000	0.000
047188	RECEIVER TRANSMITTE	MIR	15	25	2.3	1.500	0.138
204975	TRANSMITTER,RADAR	NORIS	7	NR	NR	0.000	0.000
204975	TRANSMITTER,RADAR	MIR	1	NR	NR	0.000	0.000
210326	RECEIVER,RADAR	NORIS	4	NR	NR	0.000	0.000
210326	RECEIVER,RADAR	MIR	4	NR	NR	0.000	0.000
210345	AMPLIFIER,INTERMEDI	NORIS	9	NR	NR	0.000	0.000
210345	AMPLIFIER,INTERMEDI	MIR	1	NR	NR	0.000	0.000
	AVERAGE TRANSFERED PER DAY:					39.976	3.811

K CENTER 62A

592298	GYROSCOPE,DISPLACEM	NORIS	69			0.000	0.000
592298	GYROSCOPE,DISPLACEM	MIR	64	70.8	12.3	18.125	3.149
827733	GYROSCOPE,DISPLACEM	NORIS	6	101	18.2	2.424	0.437
827733	GYROSCOPE,DISPLACEM	MIR	23			0.000	0.000
218890	SERVOMECHANISM, AMP	NORIS	1	1.25	0.087	0.005	0.000
218890	SERVOMECHANISM, AMP	MIR	25			0.000	0.000
570312	POWER SUPPLY	NORIS	4	0.5	0.029	0.008	0.000
570312	POWER SUPPLY	MIR	13			0.000	0.000
768489	SWITCH,ROTARY	NORIS	1	2	0.174	0.008	0.001
768489	SWITCH,ROTARY	MIR	9			0.000	0.000
227084	GYROSCOPE,DISPLACEM	NORIS	5	101	18.2	2.020	0.364
227084	GYROSCOPE,DISPLACEM	MIR	4			0.000	0.000
403989	CONTROLLER, COMPASS	NORIS	3			0.000	0.000
403989	CONTROLLER, COMPASS	MIR	1	6	0.845	0.024	0.003
595890	GYROSCOPE,DISPLACEM	NORIS	1	101	18.2	0.404	0.073
595890	GYROSCOPE,DISPLACEM	MIR	5			0.000	0.000
598492	AMPLIFIER-POWER SUP	NORIS	14			0.000	0.000

NIIN	NOMEN	AIMD	PROC	WT	CU	AWT	
007598492	AMPLIFIER-POWER SUP	MIR	23	29	3	2.668	0.
007625899	AMPLIFIER,SPECIAL	NORIS	5	63.7	9.1	1.274	0.
007625899	AMPLIFIER,SPECIAL	MIR	25			0.000	0.
009060598	COMPENSATOR,ELECTRO	NORIS	26			0.000	0.
009060598	COMPENSATOR,ELECTRO	MIR	13	45.2	4.6	2.350	0.
009190659	CONTROLLER,COMPASS	NORIS	2	6	0.845	0.048	0.
009190659	CONTROLLER,COMPASS	MIR	4			0.000	0.
009190663	GYROSCOPE,DISPLACEM	NORIS	26			0.000	0.
009190663	GYROSCOPE,DISPLACEM	MIR	4	101	18.2	1.616	0.
009280072	GYROSCOPE,DISPLACEM	NORIS	10	101	18.2	4.040	0.
009280072	GYROSCOPE,DISPLACEM	MIR	14			0.000	0.
009930618	CONTROLLER, COMPASS	NORIS	2			0.000	0.
009930618	CONTROLLER, COMPASS	MIR	1	6	0.845	0.024	0.
011148652	AMPLIFIER,ELECTRONI	NORIS	1	63.7	9.1	0.255	0.
011148652	AMPLIFIER,ELECTRONI	MIR	12			0.000	0.
012228460	LIGHT,INDICATOR	NORIS	3			0.000	0.
012228460	LIGHT,INDICATOR	MIR	4	1.5	0.115	0.024	0.
012458209	AMPLIFIER,ELECTRONI	NORIS	22			0.000	0.
012458209	AMPLIFIER,ELECTRONI	MIR	6	52.2	5.3	1.253	0.
012783627	CONTROLLER COMPASS	NORIS	1	3.4	0.347	0.014	0.
012783627	CONTROLLER COMPASS	MIR	3			0.000	0.
	AVERAGE TRANSFERED PER DAY:					36.583	5.
WORK CENTER 62B							
000202854	INDICATOR,VERTICAL	NORIS	5			0.000	0.
000202854	INDICATOR,VERTICAL	MIR	4	5	0.231	0.080	0.
000559517	INDICATOR,LIQUID QU	NORIS	3	16.6	1.6	0.199	0.
000559517	INDICATOR,LIQUID QU	MIR	22			0.000	0.
000563092	INDICATOR,VERTICAL	NORIS	1	3.6	0.405	0.014	0.
000563092	INDICATOR,VERTICAL	MIR	2			0.000	0.
000703374	ALTIMETER,ENCODER	NORIS	1	NR	NR	0.000	0.
000703374	ALTIMETER,ENCODER	MIR	3	NR	NR	0.000	0.
000755861	INDICATOR,TORQUEMET	NORIS	5	1.63	0.174	0.033	0.
000755861	INDICATOR,TORQUEMET	MIR	17			0.000	0.
000763050	CLOCK,PANEL	NORIS	195			0.000	0.
000763050	CLOCK,PANEL	MIR	171	1	0.174	0.684	0.
000861632	INDICATOR,ATTITUDE	NORIS	5	70.1	12.3	1.402	0.
000861632	INDICATOR,ATTITUDE	MIR	12			0.000	0.
000863840	ALTIMETER,SERVO CON	NORIS	15	8	1.5	0.480	0.
000863840	ALTIMETER,SERVO CON	MIR	151			0.000	0.
000897912	INDICATOR,BEARING-D	NORIS	4	21.1	2.6	0.338	0.
000897912	INDICATOR,BEARING-D	MIR	51			0.000	0.
001341323	INDICATOR,ATTITUDE	NORIS	1	70.1	12.3	0.280	0.
001341323	INDICATOR,ATTITUDE	MIR	5			0.000	0.
001506510	INDICATOR,PRESSURE	NORIS	9	1.5	0.289	0.054	0.

N	NOMEN	AIMD	PROC	WT	CU	AWT	ACU
506510	INDICATOR,PRESSURE	MIR	42			0.000	0.000
506526	CLOCK,PANEL	NORIS	31			0.000	0.000
506526	CLOCK,PANEL	MIR	25	1.5	0.174	0.150	0.017
655838	INDICATOR,ATTITUDE	NORIS	13	70.1	12.3	3.645	0.640
655838	INDICATOR,ATTITUDE	MIR	142			0.000	0.000
688308	INDICATOR,BEARING-D	NORIS	1	50	2.6	0.200	0.010
688308	INDICATOR,BEARING-D	MIR	11			0.000	0.000
792655	INDICATOR,ATTITUDE	NORIS	2	70.1	12.3	0.561	0.098
792655	INDICATOR,ATTITUDE	MIR	21			0.000	0.000
795086	ALTIMETER,SERVO CON	NORIS	3	8	1.5	0.096	0.018
795086	ALTIMETER,SERVO CON	MIR	52			0.000	0.000
265700	ALTIMETER,PRESSURIZ	NORIS	1			0.000	0.000
265700	ALTIMETER,PRESSURIZ	MIR	2	0.5	0.115	0.004	0.001
274005	CLOCK,AIRCRAFT,MECH	NORIS	19	1	0.087	0.076	0.007
274005	CLOCK,AIRCRAFT,MECH	MIR	65			0.000	0.000
056461	ALTIMETER, ENCODER	NORIS	18			0.000	0.000
056461	ALTIMETER, ENCODER	MIR	1	8	0.521	0.032	0.002
735046	INDICATOR,VERTICAL	NORIS	2			0.000	0.000
735046	INDICATOR,VERTICAL	MIR	1	5	0.231	0.020	0.001
145356	INDICATOR,POSITION	NORIS	1	3.5	0.289	0.014	0.001
145356	INDICATOR,POSITION	MIR	2			0.000	0.000
432534	INDICATOR,ELECTRICA	NORIS	4	2.6	0.347	0.042	0.006
432534	INDICATOR,ELECTRICA	MIR	20			0.000	0.000
887611	CLOCK	NORIS	2	1	0.087	0.008	0.001
887611	CLOCK	MIR	9			0.000	0.000
935794	CLOCK,AIRCRAFT,MECH	NORIS	3			0.000	0.000
935794	CLOCK,AIRCRAFT,MECH	MIR	1	1	0.087	0.004	0.000
141706	CLOCK,AIRCRAFT,MECH	NORIS	8			0.000	0.000
141706	CLOCK,AIRCRAFT,MECH	MIR	3	1	0.087	0.012	0.001
805927	CLOCK,PANEL	NORIS	18			0.000	0.000
805927	CLOCK,PANEL	MIR	10	1.5	0.174	0.060	0.007
821203	INDICATOR,BEARING	NORIS	1	50	2.6	0.200	0.010
821203	INDICATOR,BEARING	MIR	9			0.000	0.000
872068	ALTIMETER,SERVO CON	NORIS	8	8	1.5	0.256	0.048
872068	ALTIMETER,SERVO CON	MIR	28			0.000	0.000
123285	INDICATOR,BEARING	NORIS	7	50	2.6	1.400	0.073
123285	INDICATOR,BEARING	MIR	4			0.000	0.000
123572	INDICATOR,TURN AND	NORIS	10	4	0.174	0.160	0.007
123572	INDICATOR,TURN AND	MIR	63			0.000	0.000
680612	INDICATOR,POSITION	NORIS	1	3.5	0.289	0.014	0.001
680612	INDICATOR,POSITION	MIR	2			0.000	0.000
834383	TRANSMITTER,PRESSUR	NORIS	1	23.8	2.4	0.095	0.010
834383	TRANSMITTER,PRESSUR	MIR	4			0.000	0.000
992424	TRANSMITTER,PRESSUR	NORIS	20			0.000	0.000
992424	TRANSMITTER,PRESSUR	MIR	1	6	0.289	0.024	0.001
045856	INDICATOR,ANGLE OF	NORIS	1	21.1	2.6	0.084	0.010
045856	INDICATOR,ANGLE OF	MIR	55			0.000	0.000

NIIN	NOMEN	AIMD	PROC	WT	CU	AWT	
011473098	INDICATOR,BEARING-D	NORIS	7	50	2.6	1.400	0.
011473098	INDICATOR,BEARING-D	MIR	15			0.000	0.
011805544	INDICATOR,ATTITUDE	NORIS	1	70.1	12.3	0.280	0.
011805544	INDICATOR,ATTITUDE	MIR	16			0.000	0.
011884128	INDICATOR BEARING-D	NORIS	6	2	0.231	0.048	0.
011884128	INDICATOR BEARING-D	MIR	10			0.000	0.
012359465	CLOCK,PANEL	NORIS	18	1.5	0.174	0.108	0.
012359465	CLOCK,PANEL	MIR	18			0.000	0.
	AVERAGE TRANSFERED PER DAY:					12.558	1.
WORK CENTER 62D							
010278706	BATTERY,STORAGE	NORIS	245	3.6	0.231	3.528	0.
010278706	BATTERY,STORAGE	MIR	519			0.000	0.
	AVERAGE TRANSFERED PER DAY:					3.528	0.
WORK CENTER 62E							
002386959	CIRCUIT CARD ASSEMB	NORIS	3	0.75	0.115	0.009	0.
002386959	CIRCUIT CARD ASSEMB	MIR	6			0.000	0.
003140163	REGULATOR,VOLTAGE	NORIS	22			0.000	0.
003140163	REGULATOR,VOLTAGE	MIR	8	20.2	0.779	0.646	0.
004085682	EXCITER ASSY	NORIS	3	45.2	4.7	0.542	0.
004085682	EXCITER ASSY	MIR	7			0.000	0.
009134114	POWER SUPPLY	NORIS	3			0.000	0.
009134114	POWER SUPPLY	MIR	2	6	0.405	0.048	0.
009347943	REGULATOR,VOLTAGE	NORIS	1	1.5	0.087	0.006	0.
009347943	REGULATOR,VOLTAGE	MIR	10			0.000	0.
009699487	PANEL ASSEMBLY	NORIS	5			0.000	0.
009699487	PANEL ASSEMBLY	MIR	23	39.8	4.6	3.662	0.
011402298	GENERATOR,ALTERNATI	NORIS	2	166	7.4	1.328	0.
011402298	GENERATOR,ALTERNATI	MIR	22			0.000	0.
	AVERAGE TRANSFERED PER DAY:					6.241	0.
WORK CENTER 62F							
000925951	POWER SUPPLY	NORIS	3			0.000	0.
000925951	POWER SUPPLY	MIR	1	42.7	4.6	0.171	0.
010041603	INERTIAL MEASURING	NORIS	3	111	18.2	1.332	0.
010041603	INERTIAL MEASURING	MIR	3			0.000	0.
010041616	POWER SUPPLY	NORIS	32	42.7	4.6	5.466	0.
010041616	POWER SUPPLY	MIR	115			0.000	0.
010110855	GIMBAL ASSEMBLY	NORIS	34	100	18.2	13.600	2.
010110855	GIMBAL ASSEMBLY	MIR	140			0.000	0.

N	NOMEN	AIMD	PROC	WT	CU	AWT	ACU
294982	COMPUTER,AIR NAVIGA	NORIS	193			0.000	0.000
294982	COMPUTER,AIR NAVIGA	MIR	112	159	30.1	71.232	13.485
794218	INERTIAL MEASURING	NORIS	239	111	18.2	106.116	17.399
794218	INERTIAL MEASURING	MIR	583			0.000	0.000
971046	TEST SET,NAVIGATION	NORIS	3			0.000	0.000
971046	TEST SET,NAVIGATION	MIR	1	93	4.7	0.372	0.019
435647	INERTIAL MEASUREMEN	NORIS	1			0.000	0.000
435647	INERTIAL MEASUREMEN	MIR	7	2	0.779	0.056	0.022
785077	CIRCUIT CARD ASSEMB	NORIS	1			0.000	0.000
785077	CIRCUIT CARD ASSEMB	MIR	2	2	0.231	0.016	0.002
168096	COMPUTER,AIR NAVIGA	NORIS	3	91.8	11	1.102	0.132
168096	COMPUTER,AIR NAVIGA	MIR	5			0.000	0.000
	AVERAGE TRANSFERED PER DAY:					199.462	34.359
K CENTER 640							
118215	INDICATOR,AZIMUTH	NORIS	7	10	0.521	0.280	0.015
118215	INDICATOR,AZIMUTH	MIR	1			0.000	0.000
487279	PROGRAMMER ASSY	NORIS	7	8	1.3	0.224	0.036
487279	PROGRAMMER ASSY	MIR	25			0.000	0.000
773419	HOUSING,DISPENSER	NORIS	2	7.6	1.2	0.061	0.010
773419	HOUSING,DISPENSER	MIR	2			0.000	0.000
890663	HOUSING,DISPENSER	NORIS	1	7.6	1.2	0.030	0.005
890663	HOUSING,DISPENSER	MIR	29			0.000	0.000
495316	DISPENSER,COUNTERME	NORIS	1	13	0.636	0.052	0.003
495316	DISPENSER,COUNTERME	MIR	41			0.000	0.000
	AVERAGE TRANSFERED PER DAY:					0.647	0.068
K CENTER 65H							
948021	CSIU ASSEMBLY	NORIS	1	NR	NR	0.000	0.000
948021	CSIU ASSEMBLY	MIR	5	NR	NR	0.000	0.000
	AVERAGE TRANSFERED PER DAY:					0.000	0.000
K CENTER 65P							
052926	TRANSLATOR,SIGNAL D	NORIS	4	5	0.347	0.080	0.006
052926	TRANSLATOR,SIGNAL D	MIR	1			0.000	0.000
099562	TRANSLATOR,SIGNAL D	NORIS	5			0.000	0.000
099562	TRANSLATOR,SIGNAL D	MIR	2	3.7	0.347	0.030	0.003
099621	SYNTHESIZER,ELECTRI	NORIS	5			0.000	0.000
099621	SYNTHESIZER,ELECTRI	MIR	2	4.5	0.521	0.036	0.004
138632	CIRCUIT CARD ASSEMB	NORIS	10			0.000	0.000
138632	CIRCUIT CARD ASSEMB	MIR	4	3	0.347	0.048	0.006

NIIN	NOMEN	AIMD	PROC	WT	CU	AWT	
002527914	AMPLIFIER,RADIO FRE	NORIS	15			0.000	0.
002527914	AMPLIFIER,RADIO FRE	MIR	21	60.7	5.3	5.099	0.
002834366	AMPLIFIER ASSEMBLY	NORIS	3			0.000	0.
002834366	AMPLIFIER ASSEMBLY	MIR	2	12	2	0.096	0.
010064141	AMPLIFIER ASSEMBLY	NORIS	16			0.000	0.
010064141	AMPLIFIER ASSEMBLY	MIR	3	2.34	0.347	0.028	0.
010094247	CIRCUIT CARD ASSY	NORIS	1	3.2	0.347	0.013	0.
010094247	CIRCUIT CARD ASSY	MIR	1			0.000	0.
	AVERAGE TRANSFERED PER DAY:					5.429	0.
WORK CENTER 65Q							
001403009	TRANSPORT,MAGNETIC	NORIS	30			0.000	0.
001403009	TRANSPORT,MAGNETIC	MIR	17	80.1	10.4	5.447	0.
001404950	CIRCUIT CARD ASSEMB	NORIS	2	2.6	0.347	0.021	0.
001404950	CIRCUIT CARD ASSEMB	MIR	4			0.000	0.
001486701	CIRCUIT CARD ASSEMB	NORIS	2	2.6	0.347	0.021	0.
001486701	CIRCUIT CARD ASSEMB	MIR	3			0.000	0.
001486838	MODULATOR-AMPLIFIER	NORIS	1	5	0.521	0.020	0.
001486838	MODULATOR-AMPLIFIER	MIR	3			0.000	0.
001635501	OSCILLATOR,LOW FREQ	NORIS	1	15	2	0.060	0.
001635501	OSCILLATOR,LOW FREQ	MIR	1			0.000	0.
001645512	GENERATOR,PULSE	NORIS	1	5	0.524	0.020	0.
001645512	GENERATOR,PULSE	MIR	1			0.000	0.
001656690	POWER SUPPLY	NORIS	2	90	15.3	0.720	0.
001656690	POWER SUPPLY	MIR	7			0.000	0.
001660416	OSCILLOSCOPE	NORIS	1			0.000	0.
001660416	OSCILLOSCOPE	MIR	1	90	15.3	0.360	0.
001667552	CIRCUIT CARD ASSEMB	NORIS	1	2.6	0.347	0.010	0.
001667552	CIRCUIT CARD ASSEMB	MIR	3			0.000	0.
001667569	CIRCUIT CARD ASSEMB	NORIS	3	2.6	0.347	0.031	0.
001667569	CIRCUIT CARD ASSEMB	MIR	4			0.000	0.
001682636	CIRCUIT CARD ASSEMB	NORIS	2	1	0.087	0.008	0.
001682636	CIRCUIT CARD ASSEMB	MIR	1			0.000	0.
001685200	CIRCUIT CARD ASSEMB	NORIS	3	2.6	0.347	0.031	0.
001685200	CIRCUIT CARD ASSEMB	MIR	1			0.000	0.
001685202	CIRCUIT CARD ASSEMB	NORIS	1	2.6	0.347	0.010	0.
001685202	CIRCUIT CARD ASSEMB	MIR	2			0.000	0.
001685205	CIRCUIT CARD ASSEMB	NORIS	1	2.6	0.347	0.010	0.
001685205	CIRCUIT CARD ASSEMB	MIR	2			0.000	0.
001685206	CIRCUIT CARD ASSEMB	NORIS	6			0.000	0.
001685206	CIRCUIT CARD ASSEMB	MIR	3	2.6	0.347	0.031	0.
001685289	CIRCUIT CARD ASSEMB	NORIS	2			0.000	0.
001685289	CIRCUIT CARD ASSEMB	MIR	1	2.6	0.347	0.010	0.
001695461	CIRCUIT CARD ASSEMB	NORIS	2			0.000	0.
001695461	CIRCUIT CARD ASSEMB	MIR	1	2.6	0.347	0.010	0.

N	NOMEN	AIMD	PROC	WT	CU	AWT	ACU
446738	INTERVAL METER ASSE	NORIS	14	135	15.3	7.560	0.857
446738	INTERVAL METER ASSE	MIR	19			0.000	0.000
952012	CONTROL SWITCH	NORIS	3	NR	NR	0.000	0.000
952012	CONTROL SWITCH	MIR	9	NR	NR	0.000	0.000
952021	SWITCH ASSY	NORIS	10	NR	NR	0.000	0.000
952021	SWITCH ASSY	MIR	8	NR	NR	0.000	0.000
952033	SERVO ANAYLYZER	NORIS	4			0.000	0.000
952033	SERVO ANAYLYZER	MIR	1	5	0.706	0.020	0.003
952044	PRGM DIGITAL READ O	NORIS	14	NR	NR	0.000	0.000
952044	PRGM DIGITAL READ O	MIR	15	NR	NR	0.000	0.000
952046	GENERATOR PULSE	NORIS	13	NR	NR	0.000	0.000
952046	GENERATOR PULSE	MIR	21	NR	NR	0.000	0.000
952049	DIGITAL SUB-ASSY	NORIS	13	NR	NR	0.000	0.000
952049	DIGITAL SUB-ASSY	MIR	32	NR	NR	0.000	0.000
952057	DC POWER SUPPLY	NORIS	8	100	11.2	3.200	0.358
952057	DC POWER SUPPLY	MIR	14			0.000	0.000
952064	AC POWER SUPPLY	NORIS	3	NR	NR	0.000	0.000
952064	AC POWER SUPPLY	MIR	3	NR	NR	0.000	0.000
952080	RF MEASURE AUGMENTR	NORIS	13	NR	NR	0.000	0.000
952080	RF MEASURE AUGMENTR	MIR	2	NR	NR	0.000	0.000
	AVERAGE TRANSFERED PER DAY:					17.602	2.147

K CENTER 65S

645544	MULTIMETER,DIGITAL	NORIS	2	NR	NR	0.000	0.000
645544	MULTIMETER,DIGITAL	MIR	1	NR	NR	0.000	0.000
666896	CIRCUIT CARD ASSEMB	NORIS	1	2.6	0.347	0.010	0.001
666896	CIRCUIT CARD ASSEMB	MIR	2			0.000	0.000
685801	MULTIMETER,DIGITAL	NORIS	23	100	15.3	9.200	1.408
685801	MULTIMETER,DIGITAL	MIR	33			0.000	0.000
732787	POWER SUPPLY	NORIS	1	25	2.4	0.100	0.010
732787	POWER SUPPLY	MIR	4			0.000	0.000
364863	SIGNAL GENERATOR SU	NORIS	4	301	37.9	4.816	0.606
364863	SIGNAL GENERATOR SU	MIR	14			0.000	0.000
952018	GENERATOR DELAY	NORIS	4	NR	NR	0.000	0.000
952018	GENERATOR DELAY	MIR	12	NR	NR	0.000	0.000
952022	SIGNAL GENERATOR	NORIS	5	NR	NR	0.000	0.000
952022	SIGNAL GENERATOR	MIR	12	NR	NR	0.000	0.000
952026	SIGNAL GENERATOR	NORIS	7	NR	NR	0.000	0.000
952026	SIGNAL GENERATOR	MIR	6	NR	NR	0.000	0.000
952032	SERVO ANALYZER	NORIS	3	5	0.706	0.060	0.008
952032	SERVO ANALYZER	MIR	6			0.000	0.000
952034	SYNCHRO RESOLVER ST	NORIS	9	NR	NR	0.000	0.000
952034	SYNCHRO RESOLVER ST	MIR	11	NR	NR	0.000	0.000
952036	PHASE SENSITIVE	NORIS	4	NR	NR	0.000	0.000
952036	PHASE SENSITIVE	MIR	16	NR	NR	0.000	0.000

NIIN	NOMEN	AIMD	PROC	WT	CU	AWT	
LLR952038	PRESSURE GENERATOR	NORIS	3	NR	NR	0.000	0.
LLR952038	PRESSURE GENERATOR	MIR	3	NR	NR	0.000	0.
LLR952040	FUNCTION GENERATOR	NORIS	4	NR	NR	0.000	0.
LLR952040	FUNCTION GENERATOR	MIR	20	NR	NR	0.000	0.
LLR952042	LOW FREQ WAVE ANALY	NORIS	6	NR	NR	0.000	0.
LLR952042	LOW FREQ WAVE ANALY	MIR	3	NR	NR	0.000	0.
LLR952048	RMS GENERATOR	NORIS	56	NR	NR	0.000	0.
LLR952048	RMS GENERATOR	MIR	71	NR	NR	0.000	0.
LLR952053	ANALYZER,LOW FREQUE	NORIS	5			0.000	0.
LLR952053	ANALYZER,LOW FREQUE	MIR	2	198	20.5	1.584	0.
LLR952054	RATIO TRANSFORMER	NORIS	3	NR	NR	0.000	0.
LLR952054	RATIO TRANSFORMER	MIR	3	NR	NR	0.000	0.
LLR952056	DC POWER SUPPLY	NORIS	12	NR	NR	0.000	0.
LLR952056	DC POWER SUPPLY	MIR	5	NR	NR	0.000	0.
LLR952066	PRECISION RESISTIVE	NORIS	3	NR	NR	0.000	0.
LLR952066	PRECISION RESISTIVE	MIR	8	NR	NR	0.000	0.
	AVERAGE TRANSFERED PER DAY:					15.770	2.
WORK CENTER 670							
000013733	WRENCH,TORQUE	NORIS	79	NR	NR	0.000	0.
000013733	WRENCH,TORQUE	MIR	6	NR	NR	0.000	0.
000031443	TEST SET,RADAR	NORIS	1	101	8.6	0.404	0.
000031443	TEST SET,RADAR	MIR	15			0.000	0.
000033770	TEST SET,BENCH	NORIS	3	70.1	10	0.841	0.
000033770	TEST SET,BENCH	MIR	14			0.000	0.
000049536	MULTIMETER	NORIS	7	NR	NR	0.000	0.
000049536	MULTIMETER	MIR	11	NR	NR	0.000	0.
000181504	TEST SET	NORIS	1	77.1	5.4	0.308	0.
000181504	TEST SET	MIR	1			0.000	0.
000201366		NORIS	6	NR	NR	0.000	0.
000201366		MIR	6	NR	NR	0.000	0.
000326306	CALIBRATOR,COMPASS	NORIS	1	6	0.579	0.024	0.
000326306	CALIBRATOR,COMPASS	MIR	2			0.000	0.
000533073	OHMMETER	NORIS	6			0.000	0.
000533073	OHMMETER	MIR	3	3	0.231	0.036	0.
000533112	OSCILLOSCOPE	NORIS	3			0.000	0.
000533112	OSCILLOSCOPE	MIR	1	32.3	6.3	0.129	0.
000708816	LOAD BANK,POWER SUP	NORIS	1	6	0.926	0.024	0.
000708816	LOAD BANK,POWER SUP	MIR	4			0.000	0.
000711664	FREQUENCY MEASURING	NORIS	1	25	1.3	0.100	0.
000711664	FREQUENCY MEASURING	MIR	1			0.000	0.
000790685	TEST SET,DIRECTION	NORIS	1	71.5	9.1	0.286	0.
000790685	TEST SET,DIRECTION	MIR	2			0.000	0.
000871227	TEST SET,SIMULATOR	NORIS	2	70.1	2.9	0.561	0.
000871227	TEST SET,SIMULATOR	MIR	7			0.000	0.

	NOMEN	AIMD	PROC	WT	CU	AWT	ACU
94977	TEST SET,DATA LINK	NORIS	4	81.7	4.2	1.307	0.067
94977	TEST SET,DATA LINK	MIR	14			0.000	0.000
03409	ANALYZER,JET CALIBR	NORIS	4			0.000	0.000
03409	ANALYZER,JET CALIBR	MIR	2	150	17	1.200	0.136
16074	SERVICING-UNIT NIT	NORIS	5	2664	277	53.280	5.540
16074	SERVICING-UNIT NIT	MIR	7			0.000	0.000
44854	ELECTRON TUBE	NORIS	7	NR	NR	0.000	0.000
44854	ELECTRON TUBE	MIR	3	NR	NR	0.000	0.000
44336	TIRE INFLATOR ASSEM	NORIS	3	10	0.706	0.120	0.008
44336	TIRE INFLATOR ASSEM	MIR	258			0.000	0.000
60196	GENERATOR,SIGNAL	NORIS	16	NR	NR	0.000	0.000
60196	GENERATOR,SIGNAL	MIR	2	NR	NR	0.000	0.000
41533	TEST SET,TRANSPONDE	NORIS	79			0.000	0.000
41533	TEST SET,TRANSPONDE	MIR	74	50.7	2.9	15.007	0.858
56978	PLUG-IN UNIT,ELECTR	NORIS	1	5	0.405	0.020	0.002
56978	PLUG-IN UNIT,ELECTR	MIR	5			0.000	0.000
05137	MEMORY FILL UNIT	NORIS	5	310	17.4	6.200	0.348
05137	MEMORY FILL UNIT	MIR	6			0.000	0.000
13558	OHMMETER	NORIS	9	10	0.779	0.360	0.028
13558	OHMMETER	MIR	11			0.000	0.000
21997	TEST SET,FIRE CONTR	NORIS	77	35.6	2.2	10.965	0.678
21997	TEST SET,FIRE CONTR	MIR	105			0.000	0.000
22541	GENERATOR,PHASE	NORIS	1	57.9	4.5	0.232	0.018
22541	GENERATOR,PHASE	MIR	2			0.000	0.000
60607		NORIS	1	NR	NR	0.000	0.000
60607		MIR	1	NR	NR	0.000	0.000
98801	TEST SET,COMPUTER	NORIS	23	NR	NR	0.000	0.000
98801	TEST SET,COMPUTER	MIR	14	NR	NR	0.000	0.000
01301	MULTIMETER	NORIS	3	NR	NR	0.000	0.000
01301	MULTIMETER	MIR	3	NR	NR	0.000	0.000
46551	TEST SET,TRANSPONDE	NORIS	1	43	3.2	0.172	0.013
46551	TEST SET,TRANSPONDE	MIR	3			0.000	0.000
91698	TEST SET,INTERROGAT	NORIS	19	90	4.2	6.840	0.319
91698	TEST SET,INTERROGAT	MIR	47			0.000	0.000
77065	WRENCH,TORQUE	NORIS	8	NR	NR	0.000	0.000
77065	WRENCH,TORQUE	MIR	1	NR	NR	0.000	0.000
12271	TEST SET,RADIO	NORIS	1	64.9	6.7	0.260	0.027
12271	TEST SET,RADIO	MIR	2			0.000	0.000
69308	TRANSFORMER,POWER	NORIS	1	NR	NR	0.000	0.000
69308	TRANSFORMER,POWER	MIR	1	NR	NR	0.000	0.000
70418	PLUG-IN UNIT,ELECTR	NORIS	3	3.5	0.405	0.042	0.005
70418	PLUG-IN UNIT,ELECTR	MIR	4			0.000	0.000
39648	INDICATOR,DIAL	NORIS	1	NR	NR	0.000	0.000
39648	INDICATOR,DIAL	MIR	1	NR	NR	0.000	0.000
49142	SERVICING UNIT,NITR	NORIS	5	764	150	15.280	3.000
49142	SERVICING UNIT,NITR	MIR	16			0.000	0.000
82201	OSCILLOSCOPE	NORIS	24	50	2.7	4.800	0.259

NIIN	NOMEN	AIMD	PROC	WT	CU	AWT	
002282201	OSCILLOSCOPE	MIR	74			0.000	0.
002297041	PLUG-IN UNIT,ELECTR	NORIS	1	4.5	0.115	0.018	0.
002297041	PLUG-IN UNIT,ELECTR	MIR	5			0.000	0.
002306380	WRENCH,TORQUE	NORIS	4	NR	NR	0.000	0.
002306380	WRENCH,TORQUE	MIR	1	NR	NR	0.000	0.
002361536	BRIDGE,CAPACITANCE-	NORIS	1	NR	NR	0.000	0.
002361536	BRIDGE,CAPACITANCE-	MIR	1	NR	NR	0.000	0.
002381274	MULTIMETER	NORIS	2	5.2	0.405	0.042	0.
002381274	MULTIMETER	MIR	2			0.000	0.
002504715	WRENCH,TORQUE	NORIS	1	NR	NR	0.000	0.
002504715	WRENCH,TORQUE	MIR	1	NR	NR	0.000	0.
002563258	TEST SET,ARMAMENT W	NORIS	17			0.000	0.
002563258	TEST SET,ARMAMENT W	MIR	1	74.2	3.6	0.297	0.
002615139	PLUG-IN UNIT,ELECTR	NORIS	2	3.2	0.289	0.026	0.
002615139	PLUG-IN UNIT,ELECTR	MIR	4			0.000	0.
002636436	HANDSET	NORIS	9	NR	NR	0.000	0.
002636436	HANDSET	MIR	2	NR	NR	0.000	0.
002708409	PLUG-IN UNIT,ELECTR	NORIS	1	4	0.231	0.016	0.
002708409	PLUG-IN UNIT,ELECTR	MIR	1			0.000	0.
002724306	BOLT,MACHINE	NORIS	3	NR	NR	0.000	0.
002724306	BOLT,MACHINE	MIR	1	NR	NR	0.000	0.
003186304	GENERATOR,SIGNAL	NORIS	5	NR	NR	0.000	0.
003186304	GENERATOR,SIGNAL	MIR	2	NR	NR	0.000	0.
003228715	MULTIMETER	NORIS	2	5	0.289	0.040	0.
003228715	MULTIMETER	MIR	2			0.000	0.
003392046	TEST SET,OSCILLATOR	NORIS	1	20	0.926	0.080	0.
003392046	TEST SET,OSCILLATOR	MIR	1			0.000	0.
003773049	TEST SET,AIRCRAFT E	NORIS	3	NR	NR	0.000	0.
003773049	TEST SET,AIRCRAFT E	MIR	2	NR	NR	0.000	0.
004066553	PIN,QUICK RELEASE	NORIS	1	NR	NR	0.000	0.
004066553	PIN,QUICK RELEASE	MIR	2	NR	NR	0.000	0.
004423550	OSCILLOSCOPE	NORIS	2	NR	NR	0.000	0.
004423550	OSCILLOSCOPE	MIR	2	NR	NR	0.000	0.
004463562	VALVE,SAFETY RELIEF	NORIS	2			0.000	0.
004463562	VALVE,SAFETY RELIEF	MIR	1	1.25	0.046	0.005	0.
004510041	CLEVIS,ROD END	NORIS	1	0.13	0.009	0.001	0.
004510041	CLEVIS,ROD END	MIR	3			0.000	0.
004898877	GENERATOR,PULSE	NORIS	2	NR	NR	0.000	0.
004898877	GENERATOR,PULSE	MIR	1	NR	NR	0.000	0.
004899110	TEST SET,PRESSURE T	NORIS	53	147	15.3	31.164	3.
004899110	TEST SET,PRESSURE T	MIR	147			0.000	0.
004901496	POWER SUPPLY	NORIS	2	30.1	1.6	0.241	0.
004901496	POWER SUPPLY	MIR	2			0.000	0.
005562578	VOLTMETER	NORIS	2	NR	NR	0.000	0.
005562578	VOLTMETER	MIR	2	NR	NR	0.000	0.
005568108	TEST SET,SYNCHRO	NORIS	1	17.7	1.2	0.071	0.
005568108	TEST SET,SYNCHRO	MIR	2			0.000	0.

	NOMEN	AIMD	PROC	WT	CU	AWT	ACU
33650	TENSIOMETER DIAL IN	NORIS	36	NR	NR	0.000	0.000
33650	TENSIOMETER DIAL IN	MIR	8	NR	NR	0.000	0.000
53685	TESTER,EXHAUST GAS	NORIS	1	150	17	0.600	0.068
53685	TESTER,EXHAUST GAS	MIR	2			0.000	0.000
85201	TESTER,SPRING RESIL	NORIS	3	NR	NR	0.000	0.000
85201	TESTER,SPRING RESIL	MIR	14	NR	NR	0.000	0.000
89145	TESTER,PRESSURE GAG	NORIS	15			0.000	0.000
89145	TESTER,PRESSURE GAG	MIR	1	50.7	1.1	0.203	0.004
93290	MULTIMETER	NORIS	2	5.2	0.405	0.042	0.003
93290	MULTIMETER	MIR	2			0.000	0.000
45438	METER,AUDIO LEVEL	NORIS	8	NR	NR	0.000	0.000
45438	METER,AUDIO LEVEL	MIR	7	NR	NR	0.000	0.000
96095	VALVE,PRESSURE,ANTI	NORIS	1			0.000	0.000
96095	VALVE,PRESSURE,ANTI	MIR	1	1	0.115	0.004	0.000
74695	VOLTMETER,ELECTRONI	NORIS	4	NR	NR	0.000	0.000
74695	VOLTMETER,ELECTRONI	MIR	2	NR	NR	0.000	0.000
74706	VOLTMETER	NORIS	10	12.5	1.3	0.500	0.052
74706	VOLTMETER	MIR	11			0.000	0.000
81162	GAGE,PRESSURE	NORIS	72	NR	NR	0.000	0.000
81162	GAGE,PRESSURE	MIR	16	NR	NR	0.000	0.000
10936	BAG,URINE COLLECTIO	NORIS	3	NR	NR	0.000	0.000
10936	BAG,URINE COLLECTIO	MIR	6	NR	NR	0.000	0.000
39762	TEST SET,POWER SUPP	NORIS	1	25	2.1	0.100	0.008
39762	TEST SET,POWER SUPP	MIR	8			0.000	0.000
80311	GENERATOR,PULSE	NORIS	1	NR	NR	0.000	0.000
80311	GENERATOR,PULSE	MIR	1	NR	NR	0.000	0.000
86231	TEST SET,INDICATOR	NORIS	5			0.000	0.000
86231	TEST SET,INDICATOR	MIR	1	27	1.9	0.108	0.008
01960	CALIPER,MICROMETER,	NORIS	10	NR	NR	0.000	0.000
01960	CALIPER,MICROMETER,	MIR	9	NR	NR	0.000	0.000
97616	STROBOSCOPE	NORIS	4			0.000	0.000
97616	STROBOSCOPE	MIR	3	3	0.174	0.036	0.002
97813	TESTER,TACHOMETER	NORIS	18			0.000	0.000
97813	TESTER,TACHOMETER	MIR	5	3	0.174	0.060	0.003
33399	TEST SET,RADIO	NORIS	56			0.000	0.000
33399	TEST SET,RADIO	MIR	8	5	0.231	0.160	0.007
29959	SCALE,WEIGHING	NORIS	5	NR	NR	0.000	0.000
29959	SCALE,WEIGHING	MIR	1	NR	NR	0.000	0.000
55119	INDICATOR,DIAL	NORIS	1	NR	NR	0.000	0.000
55119	INDICATOR,DIAL	MIR	2	NR	NR	0.000	0.000
98722	VOLTMETER	NORIS	9	26	3.3	0.936	0.119
98722	VOLTMETER	MIR	19			0.000	0.000
90663	SWITCH,STEPPING	NORIS	1	NR	NR	0.000	0.000
90663	SWITCH,STEPPING	MIR	1	NR	NR	0.000	0.000
18753	SIMULATOR,GYRO AND	NORIS	1	25	4.6	0.100	0.018
18753	SIMULATOR,GYRO AND	MIR	10			0.000	0.000
18754	INDICATOR ASSEMBLY,	NORIS	2	27	4.2	0.216	0.034

NIIN	NOMEN	AIMD	PROC	WT	CU	AWT	
008518754	INDICATOR ASSEMBLY,	MIR	3			0.000	0.
008597910		NORIS	1	NR	NR	0.000	0.
008597910		MIR	6	NR	NR	0.000	0.
008885119	PREOILER	NORIS	44			0.000	0.
008885119	PREOILER	MIR	21	41.1	4.3	3.452	0.
008913616	TEST SET,ELECTRONIC	NORIS	6	54.7	3	1.313	0.
008913616	TEST SET,ELECTRONIC	MIR	11			0.000	0.
009087451	TRAILER,COMPRESSED	NORIS	1	2664	277	10.656	1.
009087451	TRAILER,COMPRESSED	MIR	9			0.000	0.
009173099	TEST SET,RADIO FREQ	NORIS	1	7	0.706	0.028	0.
009173099	TEST SET,RADIO FREQ	MIR	1			0.000	0.
009306637	OSCILLOSCOPE	NORIS	2	NR	NR	0.000	0.
009306637	OSCILLOSCOPE	MIR	31	NR	NR	0.000	0.
009316793	POWER SUPPLY	NORIS	1	NR	NR	0.000	0.
009316793	POWER SUPPLY	MIR	1	NR	NR	0.000	0.
009318361	WRENCH,TORQUE	NORIS	32	NR	NR	0.000	0.
009318361	WRENCH,TORQUE	MIR	1	NR	NR	0.000	0.
009336310	TEST STAND,HYDRAULI	NORIS	2	NR	NR	0.000	0.
009336310	TEST STAND,HYDRAULI	MIR	2	NR	NR	0.000	0.
009424224		NORIS	18	NR	NR	0.000	0.
009424224		MIR	4	NR	NR	0.000	0.
009428283	TEST SET,FLIGHT CON	NORIS	2	103	10.6	0.824	0.
009428283	TEST SET,FLIGHT CON	MIR	2			0.000	0.
009428284	TEST SET,FLIGHT CON	NORIS	2	80.1	10.2	0.641	0.
009428284	TEST SET,FLIGHT CON	MIR	4			0.000	0.
009445766	CALIBRATION SET,COM	NORIS	3	340	33.7	4.080	0.
009445766	CALIBRATION SET,COM	MIR	15			0.000	0.
009480077	TEST SET,TRANSPONDE	NORIS	21			0.000	0.
009480077	TEST SET,TRANSPONDE	MIR	1	50.7	2.9	0.203	0.
009570393	TEST SET,ELECTRICAL	NORIS	20	NR	NR	0.000	0.
009570393	TEST SET,ELECTRICAL	MIR	4	NR	NR	0.000	0.
009589155		NORIS	2	NR	NR	0.000	0.
009589155		MIR	1	NR	NR	0.000	0.
009623097	TEST SET,FUEL SYSTE	NORIS	13	46.1	5.1	2.397	0.
009623097	TEST SET,FUEL SYSTE	MIR	91			0.000	0.
009629504		NORIS	20	NR	NR	0.000	0.
009629504		MIR	1	NR	NR	0.000	0.
009694105	MULTIMETER	NORIS	9			0.000	0.
009694105	MULTIMETER	MIR	5	20	3.2	0.400	0.
009734837	FREQUENCY MEASURING	NORIS	3	57.9	3.3	0.695	0.
009734837	FREQUENCY MEASURING	MIR	7			0.000	0.
009923946	VALVE,LINEAR,DIRECT	NORIS	3	NR	NR	0.000	0.
009923946	VALVE,LINEAR,DIRECT	MIR	3	NR	NR	0.000	0.
009936371	TRANSISTOR	NORIS	1	NR	NR	0.000	0.
009936371	TRANSISTOR	MIR	1	NR	NR	0.000	0.
009950161	VALVE,PNEUMATIC TIR	NORIS	1	NR	NR	0.000	0.
009950161	VALVE,PNEUMATIC TIR	MIR	1	NR	NR	0.000	0.

	NOMEN	AIMD	PROC	WT	CU	AWT	ACU
57716	VOLTMETER	NORIS	8			0.000	0.000
57716	VOLTMETER	MIR	5	11.1	0.845	0.222	0.017
74269		NORIS	38	NR	NR	0.000	0.000
74269		MIR	16	NR	NR	0.000	0.000
86084	MULTIMETER	NORIS	2	7	NR	0.056	0.000
86084	MULTIMETER	MIR	2			0.000	0.000
86303	TEST SET,CONTROL	NORIS	1	35.6	2.8	0.142	0.011
86303	TEST SET,CONTROL	MIR	2			0.000	0.000
96832	TEST SET,LINE MAINT	NORIS	5			0.000	0.000
96832	TEST SET,LINE MAINT	MIR	3	50	9.2	0.600	0.110
87938	CHARGER,BATTERY	NORIS	3	54.2	2.7	0.650	0.032
87938	CHARGER,BATTERY	MIR	3			0.000	0.000
00088	MULTIMETER	NORIS	4	6.9	0.706	0.110	0.011
00088	MULTIMETER	MIR	9			0.000	0.000
06783	PLUG-IN UNIT,ELECTR	NORIS	2	NR	NR	0.000	0.000
06783	PLUG-IN UNIT,ELECTR	MIR	1	NR	NR	0.000	0.000
39900	TEST SET,RADIO	NORIS	12			0.000	0.000
39900	TEST SET,RADIO	MIR	3	5	0.231	0.060	0.003
62699	INDICATOR,DIGITAL D	NORIS	11			0.000	0.000
62699	INDICATOR,DIGITAL D	MIR	6	8	0.405	0.192	0.010
92228	VOLTMETER	NORIS	1	NR	NR	0.000	0.000
92228	VOLTMETER	MIR	4	NR	NR	0.000	0.000
10236	MULTIMETER	NORIS	103	NR	NR	0.000	0.000
10236	MULTIMETER	MIR	81	NR	NR	0.000	0.000
45003	LEAD,TEST	NORIS	2	NR	NR	0.000	0.000
45003	LEAD,TEST	MIR	2	NR	NR	0.000	0.000
58123	TEST SET,RADIO	NORIS	5	78.6	8.7	1.572	0.174
58123	TEST SET,RADIO	MIR	8			0.000	0.000
04113	PLUG-IN,ELECTRONIC	NORIS	7	NR	NR	0.000	0.000
04113	PLUG-IN,ELECTRONIC	MIR	3	NR	NR	0.000	0.000
11306	SIGNAL GENERATOR-DE	NORIS	2	32.3	1.4	0.258	0.011
11306	SIGNAL GENERATOR-DE	MIR	7			0.000	0.000
26914	OSCILLOSCOPE	NORIS	11	38.1	4.3	1.676	0.189
26914	OSCILLOSCOPE	MIR	12			0.000	0.000
35835	METER,MODULATION	NORIS	8			0.000	0.000
35835	METER,MODULATION	MIR	1	9	0.347	0.036	0.001
45033	WRENCH,TORQUE	NORIS	12	NR	NR	0.000	0.000
45033	WRENCH,TORQUE	MIR	2	NR	NR	0.000	0.000
68271	MAINFRAME,OSCILLOSC	NORIS	3	NR	NR	0.000	0.000
68271	MAINFRAME,OSCILLOSC	MIR	1	NR	NR	0.000	0.000
74412	TESTER,CABLE,TIME D	NORIS	62	25	1.5	6.200	0.372
74412	TESTER,CABLE,TIME D	MIR	64			0.000	0.000
06118	CHARGER,BATTERY	NORIS	8			0.000	0.000
06118	CHARGER,BATTERY	MIR	1	121	4.5	0.484	0.018
20983	WRENCH,TORQUE	NORIS	1	NR	NR	0.000	0.000
20983	WRENCH,TORQUE	MIR	2	NR	NR	0.000	0.000
50555	WRENCH,TORQUE	NORIS	2	NR	NR	0.000	0.000

NIIN	NOMEN	AIMD	PROC	WT	CU	AWT	A
010450555	WRENCH,TORQUE	MIR	1	NR	NR	0.000	0.0
010520915	MULTIMETER	NORIS	1	NR	NR	0.000	0.0
010520915	MULTIMETER	MIR	2	NR	NR	0.000	0.0
010592703	TEST SET,SYNCHROPHA	NORIS	2	NR	NR	0.000	0.0
010592703	TEST SET,SYNCHROPHA	MIR	17	NR	NR	0.000	0.0
010667885	WRENCH,TORQUE	NORIS	50	NR	NR	0.000	0.0
010667885	WRENCH,TORQUE	MIR	49	NR	NR	0.000	0.0
010695598	POWER SUPPLY	NORIS	3			0.000	0.0
010695598	POWER SUPPLY	MIR	1	28	1.3	0.112	0.0
010703507	SEAL,CONICAL,FLARED	NORIS	2	NR	NR	0.000	0.0
010703507	SEAL,CONICAL,FLARED	MIR	1	NR	NR	0.000	0.0
010742550	ANALYZER,SPECTRUM	NORIS	2			0.000	0.0
010742550	ANALYZER,SPECTRUM	MIR	1	46.1	2.3	0.184	0.0
010749102	STATOR,ENGINE GENER	NORIS	12	NR	NR	0.000	0.0
010749102	STATOR,ENGINE GENER	MIR	5	NR	NR	0.000	0.0
010824330	SWITCH,PUSH	NORIS	3	NR	NR	0.000	0.0
010824330	SWITCH,PUSH	MIR	10	NR	NR	0.000	0.0
010849665	PUMP UNIT,BREATHABL	NORIS	11	NR	NR	0.000	0.0
010849665	PUMP UNIT,BREATHABL	MIR	18	NR	NR	0.000	0.0
010904458	MULTIMETER,DIGITAL	NORIS	29			0.000	0.0
010904458	MULTIMETER,DIGITAL	MIR	12	3	0.231	0.144	0.0
010904459	MULTIMETER,DIGITAL	NORIS	18			0.000	0.0
010904459	MULTIMETER,DIGITAL	MIR	14	3	0.231	0.168	0.0
010923278	WRENCH,TORQUE	NORIS	23	NR	NR	0.000	0.0
010923278	WRENCH,TORQUE	MIR	5	NR	NR	0.000	0.0
010937831	METER,MODULATION	NORIS	1	13	0.779	0.052	0.0
010937831	METER,MODULATION	MIR	3			0.000	0.0
010947716	GENERATOR,FUNCTION	NORIS	4	16	0.706	0.256	0.0
010947716	GENERATOR,FUNCTION	MIR	4			0.000	0.0
010960426	VOLTMETER	NORIS	1	NR	NR	0.000	0.0
010960426	VOLTMETER	MIR	2	NR	NR	0.000	0.0
010982818	VOLTMETER	NORIS	3			0.000	0.0
010982818	VOLTMETER	MIR	2	10	NR	0.080	0.0
011092353	MOTOR DRIVE,CAMERA	NORIS	16	NR	NR	0.000	0.0
011092353	MOTOR DRIVE,CAMERA	MIR	1	NR	NR	0.000	0.0
011100225	CALIPER,SLIDE,DIAME	NORIS	23	NR	NR	0.000	0.0
011100225	CALIPER,SLIDE,DIAME	MIR	7	NR	NR	0.000	0.0
011104910	ALARM,GAS,AUTOMATIC	NORIS	12	52.2	7.9	2.506	0.3
011104910	ALARM,GAS,AUTOMATIC	MIR	16			0.000	0.0
011178808	OHMMETER	NORIS	8			0.000	0.0
011178808	OHMMETER	MIR	4	8	0.463	0.128	0.0
011183679	WRENCH,TORQUE	NORIS	75	NR	NR	0.000	0.0
011183679	WRENCH,TORQUE	MIR	22	NR	NR	0.000	0.0
011210570	TENSIOMETER,DIAL IN	NORIS	1	NR	NR	0.000	0.0
011210570	TENSIOMETER,DIAL IN	MIR	1	NR	NR	0.000	0.0
011253775	METER,IMPEDANCE	NORIS	1	NR	NR	0.000	0.0
011253775	METER,IMPEDANCE	MIR	1	NR	NR	0.000	0.0

N	NOMEN	AIMD	PROC	WT	CU	AWT	ACU
313883	PROBE-LEAD ASSEMBLY	NORIS	3	NR	NR	0.000	0.000
313883	PROBE-LEAD ASSEMBLY	MIR	3	NR	NR	0.000	0.000
349920	GENERATOR,SWEEP	NORIS	2	24	0.779	0.192	0.006
349920	GENERATOR,SWEEP	MIR	4			0.000	0.000
410974	TEST SET,PRESSURE A	NORIS	4			0.000	0.000
410974	TEST SET,PRESSURE A	MIR	3	147	15.3	1.764	0.184
506854	TEST SET,RADIO	NORIS	1	25	2	0.100	0.008
506854	TEST SET,RADIO	MIR	3			0.000	0.000
526705	TEST SET,TRANSPONDE	NORIS	13	50	1.4	2.600	0.073
526705	TEST SET,TRANSPONDE	MIR	26			0.000	0.000
541347	PROD TEST	NORIS	2			0.000	0.000
541347	PROD TEST	MIR	1	1	0.046	0.004	0.000
549372	PLUG-IN UNIT,EQUIPM	NORIS	1	NR	NR	0.000	0.000
549372	PLUG-IN UNIT,EQUIPM	MIR	1	NR	NR	0.000	0.000
550437	TEST SET,RADIO	NORIS	1	16.5	0.845	0.066	0.003
550437	TEST SET,RADIO	MIR	5			0.000	0.000
726119	OSCILLOSCOPE	NORIS	7	37.3	4.4	1.044	0.123
726119	OSCILLOSCOPE	MIR	10			0.000	0.000
792809	VOLTMETER,DIGITAL	NORIS	1	NR	NR	0.000	0.000
792809	VOLTMETER,DIGITAL	MIR	2	NR	NR	0.000	0.000
813155	LUMBAR PUNCTURE KIT	NORIS	1	NR	NR	0.000	0.000
813155	LUMBAR PUNCTURE KIT	MIR	3	NR	NR	0.000	0.000
857360	WHEEL,ABRASIVE	NORIS	2	NR	NR	0.000	0.000
857360	WHEEL,ABRASIVE	MIR	4	NR	NR	0.000	0.000
023543	WRENCH,TORQUE	NORIS	1	NR	NR	0.000	0.000
023543	WRENCH,TORQUE	MIR	1	NR	NR	0.000	0.000
044292	TEST SET,ORGANIZATI	NORIS	23			0.000	0.000
044292	TEST SET,ORGANIZATI	MIR	10	52.2	4.9	2.088	0.196
065809	CONTROLLER	NORIS	1	NR	NR	0.000	0.000
065809	CONTROLLER	MIR	1	NR	NR	0.000	0.000
139354	MULTIMETER	NORIS	42	NR	NR	0.000	0.000
139354	MULTIMETER	MIR	104	NR	NR	0.000	0.000
155587	TEST SET,BOMB RACK	NORIS	1	135	9.2	0.540	0.037
155587	TEST SET,BOMB RACK	MIR	1			0.000	0.000
204627	ANALYZER,BATTERY	NORIS	1	65.7	1.9	0.263	0.008
204627	ANALYZER,BATTERY	MIR	1			0.000	0.000
204985	PLUG-IN UNIT,ELECTR	NORIS	10	8.4	1.8	0.336	0.072
204985	PLUG-IN UNIT,ELECTR	MIR	10			0.000	0.000
204986	PLUG-IN UNIT,ELECTR	NORIS	5	8.4	1.8	0.168	0.036
204986	PLUG-IN UNIT,ELECTR	MIR	5			0.000	0.000
221565	GENERATOR,SIGNAL	NORIS	1	NR	NR	0.000	0.000
221565	GENERATOR,SIGNAL	MIR	2	NR	NR	0.000	0.000
300192	WRENCH,TORQUE	NORIS	1	NR	NR	0.000	0.000
300192	WRENCH,TORQUE	MIR	1	NR	NR	0.000	0.000
348248	MULTIMETER	NORIS	11	NR	NR	0.000	0.000
348248	MULTIMETER	MIR	9	NR	NR	0.000	0.000
429970		NORIS	1	NR	NR	0.000	0.000

NIIN	NOMEN	AIMD	PROC	WT	CU	AWT	A
012429970		MIR	1	NR	NR	0.000	0.0
012489079	ANALYZER,SPECTRUM	NORIS	33			0.000	0.0
012489079	ANALYZER,SPECTRUM	MIR	11	19	1.3	0.836	0.0
012504575	ADAPTER,SPECIAL	NORIS	3	NR	NR	0.000	0.0
012504575	ADAPTER,SPECIAL	MIR	7	NR	NR	0.000	0.0
012553189	COUNTER,ELECTRONIC,	NORIS	1	35.3	2.3	0.141	0.0
012553189	COUNTER,ELECTRONIC,	MIR	1			0.000	0.0
012561639	MAGAZINE,FILM	NORIS	12			0.000	0.0
012561639	MAGAZINE,FILM	MIR	10	2	0.174	0.080	0.0
012606908	OSCILLOSCOPE	NORIS	1	NR	NR	0.000	0.0
012606908	OSCILLOSCOPE	MIR	4	NR	NR	0.000	0.0
012614605	OSCILLOSCOPE	NORIS	4	NR	NR	0.000	0.0
012614605	OSCILLOSCOPE	MIR	10	NR	NR	0.000	0.0
012639094		NORIS	1	NR	NR	0.000	0.0
012639094		MIR	1	NR	NR	0.000	0.0
012647047	MULTIMETER	NORIS	1	NR	NR	0.000	0.0
012647047	MULTIMETER	MIR	1	NR	NR	0.000	0.0
012732542		NORIS	3	NR	NR	0.000	0.0
012732542		MIR	5	NR	NR	0.000	0.0
012743412	DRIVER,TORQUE	NORIS	1	NR	NR	0.000	0.0
012743412	DRIVER,TORQUE	MIR	4	NR	NR	0.000	0.0
012867079	GUN,HEATER,NITROGEN	NORIS	3	NR	NR	0.000	0.0
012867079	GUN,HEATER,NITROGEN	MIR	1	NR	NR	0.000	0.0
012908871	RIBBON,COMPUTING MA	NORIS	1	NR	NR	0.000	0.0
012908871	RIBBON,COMPUTING MA	MIR	3	NR	NR	0.000	0.0
012926225		NORIS	6	NR	NR	0.000	0.0
012926225		MIR	2	NR	NR	0.000	0.0
012952642	TRANSFER SCREEN,VID	NORIS	5	NR	NR	0.000	0.0
012952642	TRANSFER SCREEN,VID	MIR	1	NR	NR	0.000	0.0
012998229	PACKING,PREFORMED	NORIS	1	NR	NR	0.000	0.0
012998229	PACKING,PREFORMED	MIR	1	NR	NR	0.000	0.0
013052027	STUD,PLAIN	NORIS	1	NR	NR	0.000	0.0
013052027	STUD,PLAIN	MIR	2	NR	NR	0.000	0.0
013101124	VALVE,GLOBE	NORIS	3	NR	NR	0.000	0.0
013101124	VALVE,GLOBE	MIR	4	NR	NR	0.000	0.0
013143678	ADAPTER,CABIN,CARGO	NORIS	1	14	3.3	0.056	0.0
013143678	ADAPTER,CABIN,CARGO	MIR	1			0.000	0.0
013161835	ENGINE,TEST SET	NORIS	15	31	3.4	1.860	0.2
013161835	ENGINE,TEST SET	MIR	52			0.000	0.0
013252584	BRIDGE,IMPEDANCE	NORIS	1	4	0.174	0.016	0.0
013252584	BRIDGE,IMPEDANCE	MIR	2			0.000	0.0
013252900	KNOB	NORIS	44	NR	NR	0.000	0.0
013252900	KNOB	MIR	13	NR	NR	0.000	0.0
013253133	CHEMICAL LIGHT STRA	NORIS	1	NR	NR	0.000	0.0
013253133	CHEMICAL LIGHT STRA	MIR	9	NR	NR	0.000	0.0
013284955	TEST SET SUBASSEMBL	NORIS	13	NR	NR	0.000	0.0
013284955	TEST SET SUBASSEMBL	MIR	2	NR	NR	0.000	0.0

N	NOMEN	AIMD	PROC	WT	CU	AWT	ACU
288700	WATTMETER	NORIS	1	NR	NR	0.000	0.000
288700	WATTMETER	MIR	3	NR	NR	0.000	0.000
291613		NORIS	3	NR	NR	0.000	0.000
291613		MIR	1	NR	NR	0.000	0.000
	AVERAGE TRANSFERED PER DAY:					206.595	20.130
K CENTER 69A							
523720	MODULE,RELAY ASSEMB	NORIS	1	3.1	0.347	0.012	0.001
523720	MODULE,RELAY ASSEMB	MIR	4			0.000	0.000
785643	POWER SUPPLY	NORIS	5	14	1	0.280	0.020
785643	POWER SUPPLY	MIR	11			0.000	0.000
225158	DISK DRIVE	NORIS	2	150	11	1.200	0.088
225158	DISK DRIVE	MIR	1			0.000	0.000
	AVERAGE TRANSFERED PER DAY:					1.492	0.109
K CENTER 81A							
094606	ACTUATOR,PARACHUTE	NORIS	10			0.000	0.000
094606	ACTUATOR,PARACHUTE	MIR	2	3	0.231	0.024	0.002
762717	CANOPY,PERSONNEL PA	NORIS	2	NR	NR	0.000	0.000
762717	CANOPY,PERSONNEL PA	MIR	5	NR	NR	0.000	0.000
776871	CONTAINER ASSEMBLY	NORIS	6			0.000	0.000
776871	CONTAINER ASSEMBLY	MIR	4	2	0.087	0.032	0.001
900051	GUN ASSEMBLY,SPREAD	NORIS	10			0.000	0.000
900051	GUN ASSEMBLY,SPREAD	MIR	9	5	0.174	0.180	0.006
303120	HARNESS,PERSONNEL P	NORIS	1	7.5	0.347	0.030	0.001
303120	HARNESS,PERSONNEL P	MIR	1			0.000	0.000
118544	SPREADING GUN ASSEM	NORIS	9			0.000	0.000
118544	SPREADING GUN ASSEM	MIR	2	5	0.174	0.040	0.001
	AVERAGE TRANSFERED PER DAY:					0.306	0.012
K CENTER 81B							
186122	LIFE RAFT,INFLATABL	NORIS	22			0.000	0.000
186122	LIFE RAFT,INFLATABL	MIR	1	55.7	12	0.223	0.048
241558	SURVIVAL KIT CONTAI	NORIS	21			0.000	0.000
241558	SURVIVAL KIT CONTAI	MIR	4	39.8	6.9	0.637	0.110
527050	SURVIVAL KIT CONTAI	NORIS	1	39.8	6.8	0.159	0.027
527050	SURVIVAL KIT CONTAI	MIR	6			0.000	0.000
527051	SURVIVAL KIT CONTAI	NORIS	6	39.8	6.8	0.955	0.163
527051	SURVIVAL KIT CONTAI	MIR	6			0.000	0.000
600963	SURVIVAL KIT CONTAI	NORIS	2	39.8	6.9	0.318	0.055
600963	SURVIVAL KIT CONTAI	MIR	2			0.000	0.000

NIIN	NOMEN	AIMD	PROC	WT	CU	AWT	
010743408	LIFE RAFT,INFLATABL	NORIS	14			0.000	0.
010743408	LIFE RAFT,INFLATABL	MIR	3	67.5	19.1	0.810	0.
011204894	LIFE PRESERVER,YOKE	NORIS	263			0.000	0.
011204894	LIFE PRESERVER,YOKE	MIR	168	6	0.231	4.032	0.
011384329	LIFE PRESERVER,YOKE	NORIS	66	6	0.231	1.584	0.
011384329	LIFE PRESERVER,YOKE	MIR	354			0.000	0.
011769158	COVERALLS,FLYERS,AN	NORIS	8	NR	NR	0.000	0.
011769158	COVERALLS,FLYERS,AN	MIR	65	NR	NR	0.000	0.
012434523	BAG,EQUIPMENT,RESCU	NORIS	1	8	6.8	0.032	0.
012434523	BAG,EQUIPMENT,RESCU	MIR	1			0.000	0.
	AVERAGE TRANSFERED PER DAY:					8.750	0.
WORK CENTER 81C							
000555105	CYLINDER ASSEMBLY	NORIS	4			0.000	0.
000555105	CYLINDER ASSEMBLY	MIR	1	10	1.6	0.040	0.
001678388	CONVERTER,LIQUID OX	NORIS	4	30.1	2.7	0.482	0.
001678388	CONVERTER,LIQUID OX	MIR	15			0.000	0.
002527796	REGULATOR,OXYGEN,DI	NORIS	1	4	0.069	0.016	0.
002527796	REGULATOR,OXYGEN,DI	MIR	1			0.000	0.
008045803	CONVERTER,LIQUID OX	NORIS	106	30.1	2.7	12.762	1.
008045803	CONVERTER,LIQUID OX	MIR	339			0.000	0.
009154603	HOSE,OXYGEN	NORIS	7	0.63	0.046	0.018	0.
009154603	HOSE,OXYGEN	MIR	8			0.000	0.
009271652	HOSE ASSY,SURVIVAL	NORIS	37			0.000	0.
009271652	HOSE ASSY,SURVIVAL	MIR	29	1	0.046	0.116	0.
010144117	REGULATOR,OXYGEN,DE	NORIS	2	24.8	2.4	0.198	0.
010144117	REGULATOR,OXYGEN,DE	MIR	12			0.000	0.
010605027	CYLINDER ASSEMBLY	NORIS	3			0.000	0.
010605027	CYLINDER ASSEMBLY	MIR	11	10	1.6	0.440	0.
011018827	REGULATOR,OXYGEN,TR	NORIS	5			0.000	0.
011018827	REGULATOR,OXYGEN,TR	MIR	6	12	2.1	0.288	0.
011794064	CONVERTER,LIQUID OX	NORIS	13	30.1	2.7	1.565	0.
011794064	CONVERTER,LIQUID OX	MIR	60			0.000	0.
012408316	EGRESS DEVICE,VEST	NORIS	477			0.000	0.
012408316	EGRESS DEVICE,VEST	MIR	3	8	4.05	0.096	0.
	AVERAGE TRANSFERED PER DAY:					16.021	1.
WORK CENTER 940							
000916352	GENERATOR,ENGINE AC	NORIS	5			0.000	0.
000916352	GENERATOR,ENGINE AC	MIR	5	20	1.2	0.400	0.
002319689	RELAY,ELECTRICAL	NORIS	1	NR	NR	0.000	0.
002319689	RELAY,ELECTRICAL	MIR	1	NR	NR	0.000	0.
002319690	RELAY,ELECTROMAGNET	NORIS	3			0.000	0.

N	NOMEN	AIMD	PROC	WT	CU	AWT	ACU
319690	RELAY,ELECTROMAGNET	MIR	1	1.5	0.231	0.006	0.001
779242	ACTUATOR,GOVERNOR	NORIS	8	NR	NR	0.000	0.000
779242	ACTUATOR,GOVERNOR	MIR	6	NR	NR	0.000	0.000
081807	RELAY,ELECTROMAGNET	NORIS	5	NR	NR	0.000	0.000
081807	RELAY,ELECTROMAGNET	MIR	3	NR	NR	0.000	0.000
162024	VALVE	NORIS	1			0.000	0.000
162024	VALVE	MIR	7	10.5	0.521	0.294	0.015
	AVERAGE TRANSFERED PER DAY:					0.700	0.040

	WT	CU
TRANSFER/DAY TOTAL FOR REPAIR:	691.23	81.93
TRANSFER/DAY FROM N.ISLAND TO MIRAMAR FOR REPAIR:	527.34	58.27
TRANSFER/DAY FROM MIRAMAR TO N.ISLAND FOR REPAIR:	163.89	23.66

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APPENDIX D

COMPONENT REPAIR COMMONALITY of
NAS NORTH ISLAND AIMD & NAS MIRAMAR AIMD

Data Source: Naval Aviation Logistics Data Analysis (NALDA)
Period Covered: July 1990 - June 1991

Legend:
- LINE = Line Number
- NIIN = National Item Identification Number
- NOMEN = Nomenclature
- AIMD = Aircraft Intermediate Maintenance Department
- WC = Work Center
- PROC = Number of items processed
- RFI = Number of items made Ready For Issue
- BCM = Number of items declared Beyond Capability of Maintenance
- RFI% = Percentage of items processed made RFI

LINE	NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
WORK CENTER 411								
1	009688188	HEATER ASSEMBLY,FUE	NORIS	411	1	1	0	100%
2	009688188	HEATER ASSEMBLY,FUE	MIR	05A	1	0	1	0%
3	009699669	VALVE,AIR SHUT OFF	NORIS	411	7	2	5	29%
4	009699669	VALVE,AIR SHUT OFF	MIR	411	11	11	0	100%
5	010389302	VALVE,SOLENOID	NORIS	411	2	1	1	50%
6	010389302	VALVE,SOLENOID	MIR	411	13	13	0	100%
7	010621642	COWL ASSEMBLY	NORIS	411	2	0	2	0%
8	010621642	COWL ASSEMBLY	MIR	411	7	4	3	57%
		NORTH ISLAND TOTAL:			13	4	9	31%
		MIRAMAR TOTAL:			32	28	4	88%
		SUM TOTAL:			45	32	13	71%
WORK CENTER 51A								
9	000666325	FLAP,COOLER E,IT	NORIS	51A	4	0	4	0%
10	000666325	FLAP,COOLER E,IT	MIR	51A	19	4	15	21%
11	003952547	DOOR,LANDING GEAR,A	NORIS	51A	1	1	0	100%
12	003952547	DOOR,LANDING GEAR,A	MIR	51A	1	1	0	100%
13	003952550	DOOR,LANDING GEAR,A	NORIS	51A	1	0	1	0%
14	003952550	DOOR,LANDING GEAR,A	MIR	51A	7	3	4	43%
15	007995192	TUBE,TORQUE,INBOARD	NORIS	51A	1	1	0	100%
16	007995192	TUBE,TORQUE,INBOARD	MIR	05A	1	0	1	0%
17	009686614	LIMITER,LOAD	NORIS	51A	3	1	2	33%
18	009686614	LIMITER,LOAD	MIR	51A	6	1	5	17%
19	010439782	COWLING ASSEMBLY	NORIS	51A	5	4	1	80%
20	010439782	COWLING ASSEMBLY	MIR	51A	1	0	1	0%

NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
011707965	DOOR ASSEMBLY,WING	NORIS	51A	1	0	1	0%
011707965	DOOR ASSEMBLY,WING	MIR	51A	1	0	1	0%
011898798	MOUNT,DYNAFOCAL	NORIS	51A	2	1	1	50%
011898798	MOUNT,DYNAFOCAL	MIR	51A	5	4	1	80%
	NORTH ISLAND TOTAL:			18	8	10	44%
	MIRAMAR TOTAL:			41	13	28	32%
	SUM TOTAL:			59	21	38	36%
CENTER 51E							
000836213	WHEEL,LANDING GEAR	NORIS	51E	82	80	2	98%
000836213	WHEEL,LANDING GEAR	MIR	51E	301	296	5	98%
006795065	RIM,WHEEL,PNEUMATIC	NORIS	51E	121	121	0	100%
006795065	RIM,WHEEL,PNEUMATIC	MIR	51E	230	230	0	100%
010613729	WHEEL,LANDING GEAR	NORIS	51E	69	68	1	99%
010613729	WHEEL,LANDING GEAR	MIR	51E	295	282	13	96%
012943044	TIRE,PNEUMATIC	NORIS	51E	1	1	0	100%
012943044	TIRE,PNEUMATIC	MIR	51E	4	4	0	100%
	NORTH ISLAND TOTAL:			273	270	3	99%
	MIRAMAR TOTAL:			830	812	18	98%
	SUM TOTAL:			1103	1082	21	98%
CENTER 52A							
000215577	VALVE,REGULATING,FL	NORIS	52A	1	1	0	100%
000215577	VALVE,REGULATING,FL	MIR	52A	4	0	4	0%
000252475	CYLINDER ASSEMBLY,A	NORIS	52A	1	1	0	100%
000252475	CYLINDER ASSEMBLY,A	MIR	52A	3	3	0	100%
004384410	VALVE,LINEAR,DIRECT	NORIS	52A	1	1	0	100%
004384410	VALVE,LINEAR,DIRECT	MIR	52A	2	2	0	100%
009123104	PUMP,AXIAL PISTONS	NORIS	52A	2	2	0	100%
009123104	PUMP,AXIAL PISTONS	MIR	52A	8	8	0	100%
	NORTH ISLAND TOTAL:			5	5	0	100%
	MIRAMAR TOTAL:			17	13	4	76%
	SUM TOTAL:			22	18	4	82%
CENTER 52B							
001522743	BRAKE,MULTIPLE DISK	NORIS	52B	9	8	1	89%
001522743	BRAKE,MULTIPLE DISK	MIR	52B	3	2	1	67%
013218031	HOUSING,BRAKE,AIRCR	NORIS	52B	1	0	1	0%

LINE	NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
44	013218031	HOUSING,BRAKE,AIRCR	MIR	52B	1	1	0	100%
		NORTH ISLAND TOTAL:			10	8	2	80%
		MIRAMAR TOTAL:			4	3	1	75%
		SUM TOTAL:			14	11	3	79%

WORK CENTER 61A

LINE	NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
45	000000120	MOUNTING BASE,ELECT	NORIS	61A	1	1	0	100%
46	000000120	MOUNTING BASE,ELECT	MIR	61A	1	1	0	100%
47	000085602	CONTROL,INTERCOMMUN	NORIS	61A	2	1	0	50%
48	000085602	CONTROL,INTERCOMMUN	MIR	61A	14	14	0	100%
49	000150436	AMPLIFIER,RADIO FRE	NORIS	61A	4	4	0	100%
50	000150436	AMPLIFIER,RADIO FRE	MIR	61A	8	7	1	88%
51	000214742	POWER SUPPLY	NORIS	61A	1	1	0	100%
52	000214742	POWER SUPPLY	MIR	61A	1	1	0	100%
53	000431987	AMPLIFIER-OSCILLATO	NORIS	61A	4	4	0	100%
54	000431987	AMPLIFIER-OSCILLATO	MIR	61A	12	12	0	100%
55	000431990	RECEIVER-TRANSMITTE	NORIS	61A	7	2	5	29%
56	000431990	RECEIVER-TRANSMITTE	MIR	61A	9	8	1	89%
57	000504288	AMPLIFIER,RADIO FRE	NORIS	61A	3	2	1	67%
58	000504288	AMPLIFIER,RADIO FRE	MIR	61A	20	13	7	65%
59	000565487	AMPLIFIER,INTERMEDI	NORIS	61A	2	2	0	100%
60	000565487	AMPLIFIER,INTERMEDI	MIR	61A	3	3	0	100%
61	000592726	AMPLIFIER-RELAY ASS	NORIS	61A	9	9	0	100%
62	000592726	AMPLIFIER-RELAY ASS	MIR	61A	14	14	0	100%
63	000681555	RECEIVER-TRANSMITTE	NORIS	61A	37	37	0	100%
64	000681555	RECEIVER-TRANSMITTE	MIR	61A	63	63	0	100%
65	000894403	CONTROL,TRANSPONDER	NORIS	61A	2	2	0	100%
66	000894403	CONTROL,TRANSPONDER	MIR	61A	13	13	0	100%
67	000897179	RECEIVER-TRANSMITTE	NORIS	61A	1	1	0	100%
68	000897179	RECEIVER-TRANSMITTE	MIR	61A	6	6	0	100%
69	000898034	POWER SUPPLY	NORIS	61A	18	17	1	94%
70	000898034	POWER SUPPLY	MIR	61A	31	28	3	90%
71	001007931	RADIO SET	NORIS	61A	4	2	2	50%
72	001007931	RADIO SET	MIR	61A	5	5	0	100%
73	001096110	ELECTRONIC SWITCH	NORIS	61A	2	0	2	0%
74	001096110	ELECTRONIC SWITCH	MIR	61A	3	2	1	67%
75	001151029	CIRCUIT CARD ASSEMB	NORIS	61A	2	2	0	100%
76	001151029	CIRCUIT CARD ASSEMB	MIR	61A	4	3	0	75%
77	001151032	CIRCUIT CARD ASSEMB	NORIS	61A	2	2	0	100%
78	001151032	CIRCUIT CARD ASSEMB	MIR	61A	12	9	2	75%
79	001151035	CIRCUIT CARD ASSEMB	NORIS	61A	1	1	0	100%
80	001151035	CIRCUIT CARD ASSEMB	MIR	61A	1	1	0	100%
81	001174118	RECEIVER ASSEMBLY	NORIS	61A	6	6	0	100%
82	001174118	RECEIVER ASSEMBLY	MIR	61A	17	4	12	24%
83	001174257	CAVITY,TUNED	NORIS	61A	1	0	1	0%

NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
001174257	CAVITY,TUNED	MIR	61A	1	0	1	0%
001339179	CONTROL,INTERROGATO	NORIS	61A	1	1	0	100%
001339179	CONTROL,INTERROGATO	MIR	61A	1	1	0	100%
001346240	RECEIVER-TRANSMITTE	NORIS	61A	12	12	0	100%
001346240	RECEIVER-TRANSMITTE	MIR	61A	136	133	3	98%
001401775	RECEIVER-TRANSMITTE	NORIS	61A	14	13	1	93%
001401775	RECEIVER-TRANSMITTE	MIR	61A	77	77	0	100%
001407843	CIRCUIT CARD ASSEMB	NORIS	61A	2	2	0	100%
001407843	CIRCUIT CARD ASSEMB	MIR	61A	8	8	0	100%
001407844	CIRCUIT CARD ASSEMB	NORIS	61A	2	2	0	100%
001407844	CIRCUIT CARD ASSEMB	MIR	61A	1	1	0	100%
001407845	RADIO FREQUENCY SUB	NORIS	61A	11	10	1	91%
001407845	RADIO FREQUENCY SUB	MIR	61A	39	39	0	100%
001407847	CIRCUIT CARD ASSEMB	NORIS	61A	3	2	1	67%
001407847	CIRCUIT CARD ASSEMB	MIR	61A	6	6	0	100%
001453218	CIRCUIT CARD ASSEMB	NORIS	61A	1	1	0	100%
001453218	CIRCUIT CARD ASSEMB	MIR	61A	9	9	0	100%
001491319	RECEIVER-TRANSMITTE	NORIS	61A	50	50	0	100%
001491319	RECEIVER-TRANSMITTE	MIR	61A	81	81	0	100%
001602136	BEACON SET,RADIO	NORIS	61A	105	89	16	85%
001602136	BEACON SET,RADIO	MIR	61A	162	158	3	98%
001602198	RECEIVER-TRANSMITTE	NORIS	61A	33	33	0	100%
001602198	RECEIVER-TRANSMITTE	MIR	61A	98	98	0	100%
001677585	CONTROL,INTERROGATO	NORIS	61A	7	7	0	100%
001677585	CONTROL,INTERROGATO	MIR	61A	34	34	0	100%
001688797	RECEIVER-TRANSMITTE	NORIS	61A	5	5	0	100%
001688797	RECEIVER-TRANSMITTE	MIR	61A	5	5	0	100%
001773543	RECEIVER-TRANSMITTE	NORIS	61A	1	1	0	100%
001773543	RECEIVER-TRANSMITTE	MIR	61A	1	1	0	100%
001849487	ELECTRONIC COMPONEN	NORIS	61A	1	0	1	0%
001849487	ELECTRONIC COMPONEN	MIR	61A	1	1	0	100%
001863013	CONTROL,INTERCOMMUN	NORIS	61A	1	1	0	100%
001863013	CONTROL,INTERCOMMUN	MIR	61A	15	15	0	100%
002722560	AMPLIFIER,AUDIO FRE	NORIS	61A	1	1	0	100%
002722560	AMPLIFIER,AUDIO FRE	MIR	61A	2	2	0	100%
004713174	TEST SET,TRANSPONDE	NORIS	61A	15	11	4	73%
004713174	TEST SET,TRANSPONDE	MIR	61A	18	18	0	100%
004815003	CIRCUIT CARD ASSEMB	NORIS	61A	2	2	0	100%
004815003	CIRCUIT CARD ASSEMB	MIR	61A	3	3	0	100%
005051884	CIRCUIT CARD ASSEMB	NORIS	61A	20	2	18	10%
005051884	CIRCUIT CARD ASSEMB	MIR	61A	49	1	48	2%
005662959	CIRCUIT CARD ASSEMB	NORIS	61A	1	0	1	0%
005662959	CIRCUIT CARD ASSEMB	MIR	61A	2	0	2	0%
005674544	ELECTRONIC COMPONEN	NORIS	61A	2	1	1	50%
005674544	ELECTRONIC COMPONEN	MIR	61A	5	3	2	60%
005674548	CONTROL,RECEIVER-TR	NORIS	61A	6	1	5	17%
005674548	CONTROL,RECEIVER-TR	MIR	61A	7	0	7	0%
005674549	AMPLIFIER,RADIO FRE	NORIS	61A	7	0	7	0%

LINE	NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
132	005674549	AMPLIFIER,RADIO FRE	MIR	61A	25	2	23	8%
133	007385992	CONTROL,RADIO SET	NORIS	61A	6	6	0	100%
134	007385992	CONTROL,RADIO SET	MIR	61A	1	1	0	100%
135	007635947	AMPLIFIER,RADIO FRE	NORIS	61A	1	1	0	100%
136	007635947	AMPLIFIER,RADIO FRE	MIR	61A	7	7	0	100%
137	007635948	RECEIVER,RADIO	NORIS	61A	1	1	0	100%
138	007635948	RECEIVER,RADIO	MIR	61A	5	3	2	60%
139	007820844	CONTROL,TRANSPONDER	NORIS	61A	7	7	0	100%
140	007820844	CONTROL,TRANSPONDER	MIR	61A	5	5	0	100%
141	007825308	RADIO SET	NORIS	61A	542	393	149	73%
142	007825308	RADIO SET	MIR	61A	408	346	32	85%
143	007862306	RECEIVER TRANSMI	NORIS	61A	4	4	0	100%
144	007862306	RECEIVER TRANSMI	MIR	61A	62	60	2	97%
145	008100136	SYNCHRONIZER,ELECTR	NORIS	61A	14	10	4	71%
146	008100136	SYNCHRONIZER,ELECTR	MIR	61A	53	51	2	96%
147	008100140	SWITCH-AMPLIFIER	NORIS	61A	8	8	0	100%
148	008100140	SWITCH-AMPLIFIER	MIR	61A	68	64	4	94%
149	008100189	RECEIVER-TRANSMITTE	NORIS	61A	2	1	1	50%
150	008100189	RECEIVER-TRANSMITTE	MIR	61A	1	0	0	0%
151	008488407	CASE ASSEMBLY,RF	NORIS	61A	4	4	0	100%
152	008488407	CASE ASSEMBLY,RF	MIR	61A	10	10	0	100%
153	008601410	CONTROL,TRANSPONDER	NORIS	61A	2	2	0	100%
154	008601410	CONTROL,TRANSPONDER	MIR	61A	3	3	0	100%
155	008954446	TEST SET,TRANSPONDE	NORIS	61A	16	14	2	88%
156	008954446	TEST SET,TRANSPONDE	MIR	61A	21	20	1	95%
157	009007994	CONTROL,RADIO SET	NORIS	61A	1	1	0	100%
158	009007994	CONTROL,RADIO SET	MIR	61A	24	24	0	100%
159	009290904	RECEIVER,RADIO	NORIS	61A	1	1	0	100%
160	009290904	RECEIVER,RADIO	MIR	61A	1	1	0	100%
161	009332825	CONTROL,INTERCOMMUN	NORIS	61A	4	3	0	75%
162	009332825	CONTROL,INTERCOMMUN	MIR	61A	17	17	0	100%
163	009509135	CONTROL UNIT	NORIS	61A	1	1	0	100%
164	009509135	CONTROL UNIT	MIR	61A	1	1	0	100%
165	010130826	RECEIVER-TRANSMITTE	NORIS	61A	5	5	0	100%
166	010130826	RECEIVER-TRANSMITTE	MIR	05A	1	0	1	0%
167	010184240	RECEIVER-TRANSMITTE	NORIS	61A	17	17	0	100%
168	010184240	RECEIVER-TRANSMITTE	MIR	61A	57	57	0	100%
169	010213503	CONTROL,RADIO SET	NORIS	61A	1	1	0	100%
170	010213503	CONTROL,RADIO SET	MIR	61A	61	61	0	100%
171	010258697	CIRCUIT CARD ASSEMB	NORIS	61A	4	2	2	50%
172	010258697	CIRCUIT CARD ASSEMB	MIR	61A	20	0	20	0%
173	010401531	CASE ASSEMBLY	NORIS	61A	5	4	1	80%
174	010401531	CASE ASSEMBLY	MIR	61A	16	16	0	100%
175	010414622	RECEIVER-TRANSMITTE	NORIS	61A	22	22	0	100%
176	010414622	RECEIVER-TRANSMITTE	MIR	61A	110	106	4	96%
177	010436602	CIRCUIT CARD ASSEMB	NORIS	61A	3	3	0	100%
178	010436602	CIRCUIT CARD ASSEMB	MIR	61A	1	1	0	100%
179	010447010	CIRCUIT CARD ASSEMB	NORIS	61A	1	1	0	100%

NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
010447010	CIRCUIT CARD ASSEMB	MIR	61A	2	2	0	100%
010449970	CIRCUIT CARD AS	NORIS	61A	2	2	0	100%
010449970	CIRCUIT CARD AS	MIR	61A	1	1	0	100%
010458544	CIRCUIT CARD ASSEMB	NORIS	61A	1	1	0	100%
010458544	CIRCUIT CARD ASSEMB	MIR	61A	1	1	0	100%
010962977	POWER SUPPLY	NORIS	61A	7	6	1	86%
010962977	POWER SUPPLY	MIR	61A	20	14	6	70%
010963727	RECEIVER-TRANSMITTE	NORIS	61A	17	17	0	100%
010963727	RECEIVER-TRANSMITTE	MIR	61A	75	70	5	93%
011170348	POWER AMPLIFIER	NORIS	05A	2	0	2	0%
011170348	POWER AMPLIFIER	MIR	61A	10	7	1	70%
011364372	CONTROL,INTERCOMMUN	NORIS	61A	1	1	0	100%
011364372	CONTROL,INTERCOMMUN	MIR	61A	4	3	1	75%
011790560	PROCESSOR	NORIS	61A	3	1	2	33%
011790560	PROCESSOR	MIR	05A	1	0	1	0%
012033480	RECEIVER-TRANSMITTE	NORIS	61A	13	13	0	100%
012033480	RECEIVER-TRANSMITTE	MIR	61A	60	58	1	97%
	NORTH ISLAND TOTAL:			1130	894	234	79%
	MIRAMAR TOTAL:			2150	1909	203	89%
	SUM TOTAL:			3280	2803	437	85%

CENTER 61B

NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
000580338	RECEIVER-TRANSMITTE	NORIS	61B	1	1	0	100%
000580338	RECEIVER-TRANSMITTE	MIR	61B	3	1	2	33%
000609068	CIRCUIT CARD ASSEMB	NORIS	61B	3	3	0	100%
000609068	CIRCUIT CARD ASSEMB	MIR	61B	5	4	1	80%
000718651	CIRCUIT CARD ASSEMB	NORIS	61B	1	1	0	100%
000718651	CIRCUIT CARD ASSEMB	MIR	61B	1	1	0	100%
000740966	CIRCUIT CARD ASSEMB	NORIS	61B	5	3	1	60%
000740966	CIRCUIT CARD ASSEMB	MIR	61B	2	2	0	100%
000744112	POWER SUPPLY	NORIS	61B	12	11	1	92%
000744112	POWER SUPPLY	MIR	61B	2	1	0	50%
001100938	CONVERTER,SIGNAL DA	NORIS	61B	39	39	0	100%
001100938	CONVERTER,SIGNAL DA	MIR	61B	70	70	0	100%
001101019	RECEIVER,RADAR	NORIS	61B	4	4	0	100%
001101019	RECEIVER,RADAR	MIR	61B	17	17	0	100%
001108125	RECEIVER-TRANSMITTE	NORIS	61B	2	2	0	100%
001108125	RECEIVER-TRANSMITTE	MIR	61B	28	26	2	93%
001387747	RECEIVER,RADIO	NORIS	61B	1	1	0	100%
001387747	RECEIVER,RADIO	MIR	61B	7	7	0	100%
001387767	DECODER,PULSE	NORIS	61B	1	1	0	100%
001387767	DECODER,PULSE	MIR	61B	7	7	0	100%
001462276	CONTROL,NAVIGATION	NORIS	61B	15	15	0	100%
001462276	CONTROL,NAVIGATION	MIR	61B	66	66	0	100%
001473199	RECEIVER-TRANSMITTE	NORIS	61B	3	1	2	33%

LINE	NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
220	001473199	RECEIVER-TRANSMITTE	MIR	61B	8	1	7	13%
221	001485988	DECODER,PULSE	NORIS	61B	1	1	0	100%
222	001485988	DECODER,PULSE	MIR	61B	5	5	0	100%
223	001485989	CONTROL,RECEIVER	NORIS	61B	1	1	0	100%
224	001485989	CONTROL,RECEIVER	MIR	61B	7	7	0	100%
225	001486170	CIRCUIT CARD ASSEMB	NORIS	61B	1	0	1	0%
226	001486170	CIRCUIT CARD ASSEMB	MIR	61B	3	1	2	33%
227	001525089	AMPLIFIER,POWER	NORIS	61B	18	0	18	0%
228	001525089	AMPLIFIER,POWER	MIR	61B	31	1	30	3%
229	001631981	COMPUTER,RANGE	NORIS	61B	1	1	0	100%
230	001631981	COMPUTER,RANGE	MIR	61B	1	0	1	0%
231	001683630	CONVERTER-RECEIVER	NORIS	61B	12	5	7	42%
232	001683630	CONVERTER-RECEIVER	MIR	61B	7	3	4	43%
233	001683631	CONTROL,COMMUNICATI	NORIS	61B	4	4	0	100%
234	001683631	CONTROL,COMMUNICATI	MIR	61B	22	22	0	100%
235	001687813	RECEIVER-TRANSMITTE	NORIS	61B	3	3	0	100%
236	001687813	RECEIVER-TRANSMITTE	MIR	61B	1	1	0	100%
237	001687820	RECEIVER,RADAR	NORIS	61B	1	0	1	0%
238	001687820	RECEIVER,RADAR	MIR	61B	2	2	0	100%
239	001688765	CONVERTER,SIGNAL DA	NORIS	61B	4	4	0	100%
240	001688765	CONVERTER,SIGNAL DA	MIR	61B	2	2	0	100%
241	001688769	RECEIVER-TRANSMITTE	NORIS	61B	64	60	4	94%
242	001688769	RECEIVER-TRANSMITTE	MIR	61B	138	138	0	100%
243	001688770	MOUNTING BASE,ELECT	NORIS	61B	3	3	0	100%
244	001688770	MOUNTING BASE,ELECT	MIR	61B	7	7	0	100%
245	001688771	CONTROL,NAVIGATION	NORIS	61B	3	3	0	100%
246	001688771	CONTROL,NAVIGATION	MIR	61B	5	5	0	100%
247	001688856	CONTROL,RECEIVER	NORIS	61B	2	2	0	100%
248	001688856	CONTROL,RECEIVER	MIR	61B	9	9	0	100%
249	004917513	RECEIVER,RADIO	NORIS	61B	1	1	0	100%
250	004917513	RECEIVER,RADIO	MIR	61B	18	16	2	89%
251	004917514	DECODER,PULSE	NORIS	61B	5	5	0	100%
252	004917514	DECODER,PULSE	MIR	61B	15	15	0	100%
253	006500503	ANTENNA	NORIS	61B	30	28	1	93%
254	006500503	ANTENNA	MIR	61B	17	17	0	100%
255	006887618	MODULE,RANGE	NORIS	61B	1	1	0	100%
256	006887618	MODULE,RANGE	MIR	61B	1	1	0	100%
257	007384906	AMPLIFIER	NORIS	61B	1	1	0	100%
258	007384906	AMPLIFIER	MIR	61B	1	0	1	0%
259	008490055	ANTENNA	NORIS	61B	14	14	0	100%
260	008490055	ANTENNA	MIR	61B	1	1	0	100%
261	009289330	MODULE ASSY,RANGE	NORIS	61B	1	1	0	100%
262	009289330	MODULE ASSY,RANGE	MIR	61B	11	4	7	36%
263	009289335	MODULE ASSY	NORIS	61B	4	3	1	75%
264	009289335	MODULE ASSY	MIR	61B	39	24	15	62%
265	009289373	DECODER,RANGE	NORIS	61B	2	2	0	100%
266	009289373	DECODER,RANGE	MIR	61B	4	4	0	100%
267	009331802	INDICATOR,HEIGHT	NORIS	61B	23	15	8	65%

NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
009331802	INDICATOR,HEIGHT	MIR	61B	4	1	3	25%
009763353	MODULE ASSEMBLY,RF	NORIS	61B	2	1	1	50%
009763353	MODULE ASSEMBLY,RF	MIR	61B	1	1	0	100%
010121920	CONTROL,RECEIVER-TR	NORIS	61B	1	1	0	100%
010121920	CONTROL,RECEIVER-TR	MIR	61B	2	0	2	0%
010121938	RECEIVER-TRANSMITTE	NORIS	61B	29	20	9	69%
010121938	RECEIVER-TRANSMITTE	MIR	61B	12	5	7	42%
010124864	ADAPTER,RECEIVER-TR	NORIS	61B	2	2	0	100%
010124864	ADAPTER,RECEIVER-TR	MIR	61B	10	7	3	70%
010823534	RECEIVER-TRANSMITTE	NORIS	61B	5	4	1	80%
010823534	RECEIVER-TRANSMITTE	MIR	61B	140	138	1	99%
010831400	RECEIVER-TRANSMITTE	NORIS	61B	3	3	0	100%
010831400	RECEIVER-TRANSMITTE	MIR	61B	7	7	0	100%
010831401	RECEIVER-TRANSMITTE	NORIS	61B	8	8	0	100%
010831401	RECEIVER-TRANSMITTE	MIR	61B	14	14	0	100%
010874423	RECEIVER-TRANSMITTE	NORIS	61B	15	11	4	73%
010874423	RECEIVER-TRANSMITTE	MIR	61B	26	15	11	58%
010876196	RECEIVER-TRANSMITTE	NORIS	61B	1	0	1	0%
010876196	RECEIVER-TRANSMITTE	MIR	61B	17	11	5	65%
012047188	RECEIVER TRANSMITTE	NORIS	61B	21	20	1	95%
012047188	RECEIVER TRANSMITTE	MIR	61B	15	14	1	93%
012204975	TRANSMITTER,RADAR	NORIS	61B	7	6	0	86%
012204975	TRANSMITTER,RADAR	MIR	61B	1	1	0	100%
012210326	RECEIVER,RADAR	NORIS	61B	4	1	3	25%
012210326	RECEIVER,RADAR	MIR	61B	4	1	3	25%
013210345	AMPLIFIER,INTERMEDI	NORIS	61B	9	8	0	89%
013210345	AMPLIFIER,INTERMEDI	MIR	61B	1	1	0	100%
	NORTH ISLAND TOTAL:			395	325	66	82%
	MIRAMAR TOTAL:			817	704	110	86%
	SUM TOTAL:			1199	1029	176	86%

CENTER 62A

001592298	GYROSCOPE,DISPLACEM	NORIS	62A	69	13	56	19%
001592298	GYROSCOPE,DISPLACEM	MIR	62A	64	16	48	25%
001827733	GYROSCOPE,DISPLACEM	NORIS	62A	6	0	6	0%
001827733	GYROSCOPE,DISPLACEM	MIR	62A	23	5	18	22%
004218890	SERVOMECHANISM, AMP	NORIS	62A	1	0	1	0%
004218890	SERVOMECHANISM, AMP	MIR	62A	25	2	23	8%
004570312	POWER SUPPLY	NORIS	62A	4	3	1	75%
004570312	POWER SUPPLY	MIR	62A	13	13	0	100%
006768489	SWITCH,ROTARY	NORIS	62A	1	1	0	100%
006768489	SWITCH,ROTARY	MIR	62A	9	9	0	100%
007227084	GYROSCOPE,DISPLACEM	NORIS	62A	5	0	5	0%
007227084	GYROSCOPE,DISPLACEM	MIR	62A	4	1	3	25%
007403989	CONTROLLER, COMPASS	NORIS	62A	3	1	2	33%

LINE	NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
308	007403989	CONTROLLER, COMPASS	MIR	62A	1	1	0	100%
309	007595890	GYROSCOPE,DISPLACEM	NORIS	62A	1	0	1	0%
310	007595890	GYROSCOPE,DISPLACEM	MIR	62A	5	0	5	0%
311	007598492	AMPLIFIER-POWER SUP	NORIS	62A	14	13	1	93%
312	007598492	AMPLIFIER-POWER SUP	MIR	62A	23	16	7	70%
313	007625899	AMPLIFIER,SPECIAL	NORIS	05A	5	0	5	0%
314	007625899	AMPLIFIER,SPECIAL	MIR	62A	25	24	0	96%
315	009060598	COMPENSATOR,ELECTRO	NORIS	62A	26	11	15	42%
316	009060598	COMPENSATOR,ELECTRO	MIR	62A	13	4	9	31%
317	009190659	CONTROLLER,COMPASS	NORIS	62A	2	1	1	50%
318	009190659	CONTROLLER,COMPASS	MIR	62A	4	3	1	75%
319	009190663	GYROSCOPE,DISPLACEM	NORIS	62A	26	4	22	15%
320	009190663	GYROSCOPE,DISPLACEM	MIR	62A	4	1	3	25%
321	009280072	GYROSCOPE,DISPLACEM	NORIS	62A	10	1	9	10%
322	009280072	GYROSCOPE,DISPLACEM	MIR	62A	14	3	11	21%
323	009930618	CONTROLLER, COMPASS	NORIS	62A	2	1	1	50%
324	009930618	CONTROLLER, COMPASS	MIR	62A	1	1	0	100%
325	011148652	AMPLIFIER,ELECTRONI	NORIS	62A	1	0	1	0%
326	011148652	AMPLIFIER,ELECTRONI	MIR	62A	12	12	0	100%
327	012228460	LIGHT,INDICATOR	NORIS	62A	3	2	1	67%
328	012228460	LIGHT,INDICATOR	MIR	62A	4	1	3	25%
329	012458209	AMPLIFIER,ELECTRONI	NORIS	62A	22	14	8	64%
330	012458209	AMPLIFIER,ELECTRONI	MIR	62A	6	2	4	33%
331	012783627	CONTROLLER COMPASS	NORIS	62A	1	1	0	100%
332	012783627	CONTROLLER COMPASS	MIR	62A	3	3	0	100%
		NORTH ISLAND TOTAL:			202	66	136	33%
		MIRAMAR TOTAL:			253	117	134	46%
		SUM TOTAL:			455	183	270	40%
WORK CENTER 62B								
333	000202854	INDICATOR,VERTICAL	NORIS	62B	5	4	1	80%
334	000202854	INDICATOR,VERTICAL	MIR	62B	4	2	1	50%
335	000559517	INDICATOR,LIQUID QU	NORIS	05A	3	0	3	0%
336	000559517	INDICATOR,LIQUID QU	MIR	62B	22	21	1	95%
337	000563092	INDICATOR,VERTICAL	NORIS	62B	1	0	1	0%
338	000563092	INDICATOR,VERTICAL	MIR	62B	2	2	0	100%
339	000703374	ALTIMETER,ENCODER	NORIS	62B	1	1	0	100%
340	000703374	ALTIMETER,ENCODER	MIR	62B	3	1	2	33%
341	000755861	INDICATOR,TORQUEMET	NORIS	05A	5	0	5	0%
342	000755861	INDICATOR,TORQUEMET	MIR	62B	17	16	1	94%
343	000763050	CLOCK,PANEL	NORIS	62B	195	175	20	90%
344	000763050	CLOCK,PANEL	MIR	62B	171	156	15	91%
345	000861632	INDICATOR,ATTITUDE	NORIS	62B	5	2	3	40%
346	000861632	INDICATOR,ATTITUDE	MIR	62B	12	10	2	83%
347	000863840	ALTIMETER,SERVO CON	NORIS	62B	15	7	8	47%

NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
000863840	ALTIMETER,SERVO CON	MIR	62B	151	123	25	81%
000897912	INDICATOR,BEARING-D	NORIS	62B	4	1	3	25%
000897912	INDICATOR,BEARING-D	MIR	62B	51	39	12	76%
001341323	INDICATOR,ATTITUDE	NORIS	05A	1	0	1	0%
001341323	INDICATOR,ATTITUDE	MIR	62B	5	3	2	60%
001506510	INDICATOR,PRESSURE	NORIS	62B	9	6	3	67%
001506510	INDICATOR,PRESSURE	MIR	62B	42	41	1	98%
001506526	CLOCK,PANEL	NORIS	62B	31	25	6	81%
001506526	CLOCK,PANEL	MIR	62B	25	20	5	80%
001655838	INDICATOR,ATTITUDE	NORIS	62B	13	5	8	38%
001655838	INDICATOR,ATTITUDE	MIR	62B	142	106	36	75%
001688308	INDICATOR,BEARING-D	NORIS	62B	1	1	0	100%
001688308	INDICATOR,BEARING-D	MIR	62B	11	10	1	91%
001792655	INDICATOR,ATTITUDE	NORIS	05A	2	0	2	0%
001792655	INDICATOR,ATTITUDE	MIR	62B	21	16	5	76%
001795086	ALTIMETER,SERVO CON	NORIS	62B	3	3	0	100%
001795086	ALTIMETER,SERVO CON	MIR	62B	52	42	10	81%
002265700	ALTIMETER,PRESSURIZ	NORIS	62B	1	1	0	100%
002265700	ALTIMETER,PRESSURIZ	MIR	62B	2	1	1	50%
003274005	CLOCK,AIRCRAFT,MECH	NORIS	62B	19	17	2	89%
003274005	CLOCK,AIRCRAFT,MECH	MIR	62B	65	61	4	94%
004056461	ALTIMETER, ENCODER	NORIS	62B	18	13	5	72%
004056461	ALTIMETER, ENCODER	MIR	05A	1	0	1	0%
004735046	INDICATOR,VERTICAL	NORIS	62B	2	1	1	50%
004735046	INDICATOR,VERTICAL	MIR	62B	1	1	0	100%
005145356	INDICATOR,POSITION	NORIS	62B	1	1	0	100%
005145356	INDICATOR,POSITION	MIR	62B	2	2	0	100%
005432534	INDICATOR,ELECTRICA	NORIS	62B	4	4	0	100%
005432534	INDICATOR,ELECTRICA	MIR	62B	20	14	4	70%
005887611	CLOCK	NORIS	62B	2	2	0	100%
005887611	CLOCK	MIR	62B	9	9	0	100%
007935794	CLOCK,AIRCRAFT,MECH	NORIS	62B	3	2	1	67%
007935794	CLOCK,AIRCRAFT,MECH	MIR	62B	1	0	1	0%
008141706	CLOCK,AIRCRAFT,MECH	NORIS	62B	8	7	1	88%
008141706	CLOCK,AIRCRAFT,MECH	MIR	62B	3	3	0	100%
008805927	CLOCK,PANEL	NORIS	62B	18	13	5	72%
008805927	CLOCK,PANEL	MIR	62B	10	8	1	80%
008821203	INDICATOR,BEARING	NORIS	62B	1	1	0	100%
008821203	INDICATOR,BEARING	MIR	62B	9	8	1	89%
008872068	ALTIMETER,SERVO CON	NORIS	62B	8	6	2	75%
008872068	ALTIMETER,SERVO CON	MIR	62B	28	27	1	96%
009123285	INDICATOR,BEARING	NORIS	62B	7	5	2	71%
009123285	INDICATOR,BEARING	MIR	62B	4	4	0	100%
009123572	INDICATOR,TURN AND	NORIS	62B	10	8	2	80%
009123572	INDICATOR,TURN AND	MIR	62B	63	61	2	97%
009680612	INDICATOR,POSITION	NORIS	62B	1	1	0	100%
009680612	INDICATOR,POSITION	MIR	62B	2	2	0	100%
009834383	TRANSMITTER,PRESSUR	NORIS	62B	1	1	0	100%

LINE	NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
396	009834383	TRANSMITTER,PRESSUR	MIR	62B	4	1	3	25%
397	009992424	TRANSMITTER,PRESSUR	NORIS	62B	20	9	11	45%
398	009992424	TRANSMITTER,PRESSUR	MIR	62B	1	0	1	0%
399	010045856	INDICATOR,ANGLE OF	NORIS	62B	1	1	0	100%
400	010045856	INDICATOR,ANGLE OF	MIR	62B	55	55	0	100%
401	011473098	INDICATOR,BEARING-D	NORIS	62B	7	6	1	86%
402	011473098	INDICATOR,BEARING-D	MIR	62B	15	14	1	93%
403	011805544	INDICATOR,ATTITUDE	NORIS	05A	1	0	1	0%
404	011805544	INDICATOR,ATTITUDE	MIR	62B	16	15	1	94%
405	011884128	INDICATOR BEARING-D	NORIS	62B	6	2	4	33%
406	011884128	INDICATOR BEARING-D	MIR	62B	10	9	1	90%
407	012359465	CLOCK,PANEL	NORIS	62B	18	13	5	72%
408	012359465	CLOCK,PANEL	MIR	62B	18	17	1	94%
		NORTH ISLAND TOTAL:			451	344	107	76%
		MIRAMAR TOTAL:			1070	920	143	86%
		SUM TOTAL:			1521	1264	250	83%

WORK CENTER 62D

LINE	NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
409	010278706	BATTERY,STORAGE	NORIS	62D	245	242	3	99%
410	010278706	BATTERY,STORAGE	MIR	62D	519	446	73	86%
		NORTH ISLAND TOTAL:			245	242	3	99%
		MIRAMAR TOTAL:			519	446	73	86%
		SUM TOTAL:			764	688	76	90%

WORK CENTER 62E

LINE	NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
411	002386959	CIRCUIT CARD ASSEMB	NORIS	62E	3	3	0	100%
412	002386959	CIRCUIT CARD ASSEMB	MIR	62E	6	6	0	100%
413	003140163	REGULATOR,VOLTAGE	NORIS	62E	22	22	0	100%
414	003140163	REGULATOR,VOLTAGE	MIR	62E	8	8	0	100%
415	004085682	EXCITER ASSY	NORIS	62E	3	3	0	100%
416	004085682	EXCITER ASSY	MIR	62E	7	6	1	86%
417	009134114	POWER SUPPLY	NORIS	62E	3	3	0	100%
418	009134114	POWER SUPPLY	MIR	62E	2	0	2	0%
419	009347943	REGULATOR,VOLTAGE	NORIS	62E	1	1	0	100%
420	009347943	REGULATOR,VOLTAGE	MIR	62E	10	10	0	100%
421	009699487	PANEL ASSEMBLY	NORIS	62E	5	4	1	80%
422	009699487	PANEL ASSEMBLY	MIR	62E	23	9	14	39%
423	011402298	GENERATOR,ALTERNATI	NORIS	62E	2	1	1	50%
424	011402298	GENERATOR,ALTERNATI	MIR	62E	22	6	16	27%
		NORTH ISLAND TOTAL:			39	37	2	95%
		MIRAMAR TOTAL:			78	45	33	58%

NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
	SUM TOTAL:			117	82	35	70%
CENTER 62F							
000925951	POWER SUPPLY	NORIS	62F	3	2	1	67%
000925951	POWER SUPPLY	MIR	62F	1	1	0	100%
010041603	INERTIAL MEASURING	NORIS	62F	3	3	0	100%
010041603	INERTIAL MEASURING	MIR	62F	3	3	0	100%
010041616	POWER SUPPLY	NORIS	62F	32	27	5	84%
010041616	POWER SUPPLY	MIR	62F	115	111	4	97%
010110855	GIMBAL ASSEMBLY	NORIS	62F	34	32	2	94%
010110855	GIMBAL ASSEMBLY	MIR	62F	140	112	28	80%
010294982	COMPUTER,AIR NAVIGA	NORIS	62F	193	173	20	90%
010294982	COMPUTER,AIR NAVIGA	MIR	62F	112	92	15	82%
010794218	INERTIAL MEASURING	NORIS	62F	239	237	2	99%
010794218	INERTIAL MEASURING	MIR	62F	583	575	8	99%
010971046	TEST SET,NAVIGATION	NORIS	62F	3	3	0	100%
010971046	TEST SET,NAVIGATION	MIR	62F	1	1	0	100%
011435647	INERTIAL MEASUREMEN	NORIS	62F	1	1	0	100%
011435647	INERTIAL MEASUREMEN	MIR	62F	7	0	7	0%
011785077	CIRCUIT CARD ASSEMB	NORIS	62F	1	1	0	100%
011785077	CIRCUIT CARD ASSEMB	MIR	62F	2	0	2	0%
012168096	COMPUTER,AIR NAVIGA	NORIS	05A	3	0	3	0%
012168096	COMPUTER,AIR NAVIGA	MIR	62F	5	4	0	80%
	NORTH ISLAND TOTAL:			247	215	32	87%
	MIRAMAR TOTAL:			1234	1163	65	94%
	SUM TOTAL:			1481	1378	97	93%
CENTER 640							
001118215	INDICATOR,AZIMUTH	NORIS	05A	7	0	7	0%
001118215	INDICATOR,AZIMUTH	MIR	640	1	1	0	100%
001487279	PROGRAMMER ASSY	NORIS	640	7	1	6	14%
001487279	PROGRAMMER ASSY	MIR	640	25	25	0	100%
001773419	HOUSING,DISPENSER	NORIS	640	2	2	0	100%
001773419	HOUSING,DISPENSER	MIR	640	2	2	0	100%
004890663	HOUSING,DISPENSER	NORIS	640	1	1	0	100%
004890663	HOUSING,DISPENSER	MIR	640	29	29	0	100%
010495316	DISPENSER,COUNTERME	NORIS	640	1	1	0	100%
010495316	DISPENSER,COUNTERME	MIR	640	41	28	13	68%
	NORTH ISLAND TOTAL:			18	5	13	28%
	MIRAMAR TOTAL:			98	85	13	87%
	SUM TOTAL:			116	90	26	78%

LINE	NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
WORK CENTER 65H								
455	LLR948021	CSIU ASSEMBLY	NORIS	65H	1	1	0	100%
456	LLR948021	CSIU ASSEMBLY	MIR	65H	5	5	0	100%
		NORTH ISLAND TOTAL:			1	1	0	100%
		MIRAMAR TOTAL:			5	5	0	100%
		SUM TOTAL:			6	6	0	100%
WORK CENTER 65P								
457	002052926	TRANSLATOR,SIGNAL D	NORIS	65P	4	1	3	25%
458	002052926	TRANSLATOR,SIGNAL D	MIR	65P	1	1	0	100%
459	002099562	TRANSLATOR,SIGNAL D	NORIS	65P	5	3	2	60%
460	002099562	TRANSLATOR,SIGNAL D	MIR	05A	2	0	2	0%
461	002099621	SYNTHESIZER,ELECTRI	NORIS	65P	5	3	2	60%
462	002099621	SYNTHESIZER,ELECTRI	MIR	65P	2	0	2	0%
463	002138632	CIRCUIT CARD ASSEMB	NORIS	65P	10	7	3	70%
464	002138632	CIRCUIT CARD ASSEMB	MIR	05A	4	0	4	0%
465	002527914	AMPLIFIER,RADIO FRE	NORIS	65P	15	6	9	40%
466	002527914	AMPLIFIER,RADIO FRE	MIR	05A	21	0	21	0%
467	002834366	AMPLIFIER ASSEMBLY	NORIS	65P	3	3	0	100%
468	002834366	AMPLIFIER ASSEMBLY	MIR	65P	2	0	2	0%
469	010064141	AMPLIFIER ASSEMBLY	NORIS	65P	16	16	0	100%
470	010064141	AMPLIFIER ASSEMBLY	MIR	65P	3	2	1	67%
471	010094247	CIRCUIT CARD ASSY	NORIS	65P	1	1	0	100%
472	010094247	CIRCUIT CARD ASSY	MIR	65P	1	1	0	100%
		NORTH ISLAND TOTAL:			59	40	19	68%
		MIRAMAR TOTAL:			36	4	32	11%
		SUM TOTAL:			95	44	51	46%
WORK CENTER 65Q								
473	001403009	TRANSPORT,MAGNETIC	NORIS	65Q	30	30	0	100%
474	001403009	TRANSPORT,MAGNETIC	MIR	65Q	17	17	0	100%
475	001404950	CIRCUIT CARD ASSEMB	NORIS	65Q	2	2	0	100%
476	001404950	CIRCUIT CARD ASSEMB	MIR	65Q	4	3	1	75%
477	001486701	CIRCUIT CARD ASSEMB	NORIS	65Q	2	2	0	100%
478	001486701	CIRCUIT CARD ASSEMB	MIR	65Q	3	3	0	100%
479	001486838	MODULATOR-AMPLIFIER	NORIS	65Q	1	1	0	100%
480	001486838	MODULATOR-AMPLIFIER	MIR	65Q	3	1	2	33%
481	001635501	OSCILLATOR,LOW FREQ	NORIS	65Q	1	1	0	100%
482	001635501	OSCILLATOR,LOW FREQ	MIR	65Q	1	1	0	100%
483	001645512	GENERATOR,PULSE	NORIS	65Q	1	0	1	0%

NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
001645512	GENERATOR,PULSE	MIR	65Q	1	0	1	0%
001656690	POWER SUPPLY	NORIS	05A	2	0	2	0%
001656690	POWER SUPPLY	MIR	65Q	7	5	2	71%
001660416	OSCILLOSCOPE	NORIS	65Q	1	1	0	100%
001660416	OSCILLOSCOPE	MIR	05A	1	0	1	0%
001667552	CIRCUIT CARD ASSEMB	NORIS	65Q	1	1	0	100%
001667552	CIRCUIT CARD ASSEMB	MIR	65Q	3	3	0	100%
001667569	CIRCUIT CARD ASSEMB	NORIS	65Q	3	3	0	100%
001667569	CIRCUIT CARD ASSEMB	MIR	65Q	4	4	0	100%
001682636	CIRCUIT CARD ASSEMB	NORIS	05A	2	0	2	0%
001682636	CIRCUIT CARD ASSEMB	MIR	65Q	1	1	0	100%
001685200	CIRCUIT CARD ASSEMB	NORIS	65Q	3	1	2	33%
001685200	CIRCUIT CARD ASSEMB	MIR	65Q	1	1	0	100%
001685202	CIRCUIT CARD ASSEMB	NORIS	65Q	1	1	0	100%
001685202	CIRCUIT CARD ASSEMB	MIR	65Q	2	2	0	100%
001685205	CIRCUIT CARD ASSEMB	NORIS	65Q	1	0	1	0%
001685205	CIRCUIT CARD ASSEMB	MIR	65Q	2	2	0	100%
001685206	CIRCUIT CARD ASSEMB	NORIS	65Q	6	6	0	100%
001685206	CIRCUIT CARD ASSEMB	MIR	65Q	3	3	0	100%
001685289	CIRCUIT CARD ASSEMB	NORIS	65Q	2	2	0	100%
001685289	CIRCUIT CARD ASSEMB	MIR	65Q	1	1	0	100%
001695461	CIRCUIT CARD ASSEMB	NORIS	65Q	2	2	0	100%
001695461	CIRCUIT CARD ASSEMB	MIR	65Q	1	1	0	100%
010446738	INTERVAL METER ASSE	NORIS	65Q	14	14	0	100%
010446738	INTERVAL METER ASSE	MIR	65Q	19	19	0	100%
LLR952012	CONTROL SWITCH	NORIS	65Q	3	3	0	100%
LLR952012	CONTROL SWITCH	MIR	65Q	9	9	0	100%
LLR952021	SWITCH ASSY	NORIS	65Q	10	10	0	100%
LLR952021	SWITCH ASSY	MIR	65Q	8	8	0	100%
LLR952033	SERVO ANAYLYZER	NORIS	65Q	4	4	0	100%
LLR952033	SERVO ANAYLYZER	MIR	65Q	1	1	0	100%
LLR952044	PRGM DIGITAL READ O	NORIS	65Q	14	14	0	100%
LLR952044	PRGM DIGITAL READ O	MIR	65Q	15	15	0	100%
LLR952046	GENERATOR PULSE	NORIS	65Q	13	13	0	100%
LLR952046	GENERATOR PULSE	MIR	65Q	21	21	0	100%
LLR952049	DIGITAL SUB-ASSY	NORIS	65Q	13	13	0	100%
LLR952049	DIGITAL SUB-ASSY	MIR	65Q	32	32	0	100%
LLR952057	DC POWER SUPPLY	NORIS	65Q	8	8	0	100%
LLR952057	DC POWER SUPPLY	MIR	65Q	14	14	0	100%
LLR952064	AC POWER SUPPLY	NORIS	65Q	3	3	0	100%
LLR952064	AC POWER SUPPLY	MIR	65Q	3	3	0	100%
LLR952080	RF MEASURE AUGMENTR	NORIS	65Q	13	13	0	100%
LLR952080	RF MEASURE AUGMENTR	MIR	65Q	2	2	0	100%
	NORTH ISLAND TOTAL:			156	148	8	95%
	MIRAMAR TOTAL:			179	172	7	96%
	SUM TOTAL:			335	320	15	96%

LINE	NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
WORK CENTER 65S								
527	001645544	MULTIMETER,DIGITAL	NORIS	65S	2	2	0	100%
528	001645544	MULTIMETER,DIGITAL	MIR	65S	1	1	0	100%
529	001666896	CIRCUIT CARD ASSEMB	NORIS	65S	1	1	0	100%
530	001666896	CIRCUIT CARD ASSEMB	MIR	65S	2	2	0	100%
531	010685801	MULTIMETER,DIGITAL	NORIS	65S	23	23	0	100%
532	010685801	MULTIMETER,DIGITAL	MIR	65S	33	33	0	100%
533	010732787	POWER SUPPLY	NORIS	65S	1	0	1	0%
534	010732787	POWER SUPPLY	MIR	65S	4	0	4	0%
535	012364863	SIGNAL GENERATOR SU	NORIS	65S	4	4	0	100%
536	012364863	SIGNAL GENERATOR SU	MIR	65S	14	14	0	100%
537	LLR952018	GENERATOR DELAY	NORIS	65S	4	4	0	100%
538	LLR952018	GENERATOR DELAY	MIR	65S	12	12	0	100%
539	LLR952022	SIGNAL GENERATOR	NORIS	65S	5	5	0	100%
540	LLR952022	SIGNAL GENERATOR	MIR	65S	12	12	0	100%
541	LLR952026	SIGNAL GENERATOR	NORIS	65S	7	7	0	100%
542	LLR952026	SIGNAL GENERATOR	MIR	65S	6	6	0	100%
543	LLR952032	SERVO ANALYZER	NORIS	65S	3	3	0	100%
544	LLR952032	SERVO ANALYZER	MIR	65S	6	6	0	100%
545	LLR952034	SYNCHRO RESOLVER ST	NORIS	65S	9	9	0	100%
546	LLR952034	SYNCHRO RESOLVER ST	MIR	65S	11	11	0	100%
547	LLR952036	PHASE SENSITIVE	NORIS	65S	4	4	0	100%
548	LLR952036	PHASE SENSITIVE	MIR	65S	16	16	0	100%
549	LLR952038	PRESSURE GENERATOR	NORIS	65S	3	3	0	100%
550	LLR952038	PRESSURE GENERATOR	MIR	65S	3	3	0	100%
551	LLR952040	FUNCTION GENERATOR	NORIS	65S	4	4	0	100%
552	LLR952040	FUNCTION GENERATOR	MIR	65S	20	20	0	100%
553	LLR952042	LOW FREQ WAVE ANALY	NORIS	65S	6	6	0	100%
554	LLR952042	LOW FREQ WAVE ANALY	MIR	65S	3	3	0	100%
555	LLR952048	RMS GENERATOR	NORIS	65S	56	56	0	100%
556	LLR952048	RMS GENERATOR	MIR	65S	71	71	0	100%
557	LLR952053	ANALYZER,LOW FREQUE	NORIS	65S	5	5	0	100%
558	LLR952053	ANALYZER,LOW FREQUE	MIR	65S	2	2	0	100%
559	LLR952054	RATIO TRANSFORMER	NORIS	65S	3	3	0	100%
560	LLR952054	RATIO TRANSFORMER	MIR	65S	3	3	0	100%
561	LLR952056	DC POWER SUPPLY	NORIS	65S	12	12	0	100%
562	LLR952056	DC POWER SUPPLY	MIR	65S	5	5	0	100%
563	LLR952066	PRECISION RESISTIVE	NORIS	65S	3	3	0	100%
564	LLR952066	PRECISION RESISTIVE	MIR	65S	8	8	0	100%
		NORTH ISLAND TOTAL:			155	154	1	99%
		MIRAMAR TOTAL:			232	228	4	98%
		SUM TOTAL:			387	382	5	99%

E	NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
K	CENTER 670							
5	000013733	WRENCH,TORQUE	NORIS	670	79	67	12	85%
6	000013733	WRENCH,TORQUE	MIR	670	6	6	0	100%
7	000031443	TEST SET,RADAR	NORIS	670	1	1	0	100%
8	000031443	TEST SET,RADAR	MIR	670	15	15	0	100%
9	000033770	TEST SET,BENCH	NORIS	670	3	3	0	100%
0	000033770	TEST SET,BENCH	MIR	670	14	14	0	100%
1	000049536	MULTIMETER	NORIS	670	7	6	0	86%
2	000049536	MULTIMETER	MIR	670	11	11	0	100%
3	000181504	TEST SET	NORIS	670	1	1	0	100%
4	000181504	TEST SET	MIR	670	1	1	0	100%
5	000201366		NORIS	670	6	6	0	100%
6	000201366		MIR	670	6	6	0	100%
7	000326306	CALIBRATOR,COMPASS	NORIS	670	1	1	0	100%
8	000326306	CALIBRATOR,COMPASS	MIR	670	2	2	0	100%
9	000533073	OHMMETER	NORIS	670	6	6	0	100%
0	000533073	OHMMETER	MIR	670	3	3	0	100%
1	000533112	OSCILLOSCOPE	NORIS	670	3	3	0	100%
2	000533112	OSCILLOSCOPE	MIR	670	1	1	0	100%
3	000708816	LOAD BANK,POWER SUP	NORIS	670	1	1	0	100%
4	000708816	LOAD BANK,POWER SUP	MIR	670	4	4	0	100%
5	000711664	FREQUENCY MEASURING	NORIS	670	1	1	0	100%
6	000711664	FREQUENCY MEASURING	MIR	670	1	1	0	100%
7	000790685	TEST SET,DIRECTION	NORIS	670	1	1	0	100%
8	000790685	TEST SET,DIRECTION	MIR	670	2	2	0	100%
9	000871227	TEST SET,SIMULATOR	NORIS	670	2	2	0	100%
0	000871227	TEST SET,SIMULATOR	MIR	670	7	7	0	100%
1	000894977	TEST SET,DATA LINK	NORIS	670	4	4	0	100%
2	000894977	TEST SET,DATA LINK	MIR	670	14	14	0	100%
3	000903409	ANALYZER,JET CALIBR	NORIS	670	4	4	0	100%
4	000903409	ANALYZER,JET CALIBR	MIR	670	2	2	0	100%
5	001116074	SERVICING-UNIT NIT	NORIS	670	5	5	0	100%
6	001116074	SERVICING-UNIT NIT	MIR	670	7	7	0	100%
7	001144854	ELECTRON TUBE	NORIS	670	7	7	0	100%
8	001144854	ELECTRON TUBE	MIR	670	3	3	0	100%
9	001244336	TIRE INFLATOR ASSEM	NORIS	670	3	3	0	100%
0	001244336	TIRE INFLATOR ASSEM	MIR	670	258	258	0	100%
1	001260196	GENERATOR,SIGNAL	NORIS	670	16	16	0	100%
2	001260196	GENERATOR,SIGNAL	MIR	670	2	2	0	100%
3	001341533	TEST SET,TRANSPONDE	NORIS	670	79	79	0	100%
4	001341533	TEST SET,TRANSPONDE	MIR	670	74	74	0	100%
5	001356978	PLUG-IN UNIT,ELECTR	NORIS	670	1	1	0	100%
6	001356978	PLUG-IN UNIT,ELECTR	MIR	670	5	5	0	100%
7	001405137	MEMORY FILL UNIT	NORIS	670	5	4	1	80%
8	001405137	MEMORY FILL UNIT	MIR	670	6	6	0	100%
9	001413558	OHMMETER	NORIS	670	9	8	0	89%
0	001413558	OHMMETER	MIR	670	11	11	0	100%
1	001521997	TEST SET,FIRE CONTR	NORIS	670	77	77	0	100%

LINE	NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
612	001521997	TEST SET,FIRE CONTR	MIR	670	105	105	0	100%
613	001522541	GENERATOR,PHASE	NORIS	670	1	1	0	100%
614	001522541	GENERATOR,PHASE	MIR	670	2	2	0	100%
615	001560607		NORIS	670	1	0	0	0%
616	001560607		MIR	670	1	1	0	100%
617	001598801	TEST SET,COMPUTER	NORIS	670	23	23	0	100%
618	001598801	TEST SET,COMPUTER	MIR	670	14	14	0	100%
619	001601301	MULTIMETER	NORIS	670	3	3	0	100%
620	001601301	MULTIMETER	MIR	670	3	3	0	100%
621	001646551	TEST SET,TRANSPONDE	NORIS	670	1	1	0	100%
622	001646551	TEST SET,TRANSPONDE	MIR	670	3	3	0	100%
623	001691698	TEST SET,INTERROGAT	NORIS	670	19	19	0	100%
624	001691698	TEST SET,INTERROGAT	MIR	670	47	47	0	100%
625	001777065	WRENCH,TORQUE	NORIS	670	8	7	1	88%
626	001777065	WRENCH,TORQUE	MIR	670	1	1	0	100%
627	001812271	TEST SET,RADIO	NORIS	670	1	1	0	100%
628	001812271	TEST SET,RADIO	MIR	670	2	2	0	100%
629	001869308	TRANSFORMER,POWER	NORIS	670	1	1	0	100%
630	001869308	TRANSFORMER,POWER	MIR	670	1	1	0	100%
631	002170418	PLUG-IN UNIT,ELECTR	NORIS	670	3	3	0	100%
632	002170418	PLUG-IN UNIT,ELECTR	MIR	670	4	4	0	100%
633	002239648	INDICATOR,DIAL	NORIS	670	1	1	0	100%
634	002239648	INDICATOR,DIAL	MIR	670	1	1	0	100%
635	002249142	SERVICING UNIT,NITR	NORIS	670	5	5	0	100%
636	002249142	SERVICING UNIT,NITR	MIR	670	16	16	0	100%
637	002282201	OSCILLOSCOPE	NORIS	670	24	23	1	96%
638	002282201	OSCILLOSCOPE	MIR	670	74	74	0	100%
639	002297041	PLUG-IN UNIT,ELECTR	NORIS	670	1	1	0	100%
640	002297041	PLUG-IN UNIT,ELECTR	MIR	670	5	5	0	100%
641	002306380	WRENCH,TORQUE	NORIS	670	4	3	1	75%
642	002306380	WRENCH,TORQUE	MIR	670	1	1	0	100%
643	002361536	BRIDGE,CAPACITANCE-	NORIS	670	1	1	0	100%
644	002361536	BRIDGE,CAPACITANCE-	MIR	670	1	1	0	100%
645	002381274	MULTIMETER	NORIS	670	2	2	0	100%
646	002381274	MULTIMETER	MIR	670	2	2	0	100%
647	002504715	WRENCH,TORQUE	NORIS	670	1	1	0	100%
648	002504715	WRENCH,TORQUE	MIR	670	1	1	0	100%
649	002563258	TEST SET,ARMAMENT W	NORIS	670	17	17	0	100%
650	002563258	TEST SET,ARMAMENT W	MIR	670	1	1	0	100%
651	002615139	PLUG-IN UNIT,ELECTR	NORIS	670	2	2	0	100%
652	002615139	PLUG-IN UNIT,ELECTR	MIR	670	4	4	0	100%
653	002636436	HANDSET	NORIS	670	9	9	0	100%
654	002636436	HANDSET	MIR	670	2	2	0	100%
655	002708409	PLUG-IN UNIT,ELECTR	NORIS	670	1	1	0	100%
656	002708409	PLUG-IN UNIT,ELECTR	MIR	670	1	1	0	100%
657	002724306	BOLT,MACHINE	NORIS	670	3	3	0	100%
658	002724306	BOLT,MACHINE	MIR	670	1	1	0	100%
659	003186304	GENERATOR,SIGNAL	NORIS	670	5	5	0	100%

E	NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
0	003186304	GENERATOR,SIGNAL	MIR	670	2	2	0	100%
1	003228715	MULTIMETER	NORIS	670	2	2	0	100%
2	003228715	MULTIMETER	MIR	670	2	2	0	100%
3	003392046	TEST SET,OSCILLATOR	NORIS	670	1	1	0	100%
4	003392046	TEST SET,OSCILLATOR	MIR	670	1	1	0	100%
5	003773049	TEST SET,AIRCRAFT E	NORIS	670	3	3	0	100%
6	003773049	TEST SET,AIRCRAFT E	MIR	670	2	2	0	100%
7	004066553	PIN,QUICK RELEASE	NORIS	670	1	1	0	100%
8	004066553	PIN,QUICK RELEASE	MIR	670	2	2	0	100%
9	004423550	OSCILLOSCOPE	NORIS	670	2	2	0	100%
0	004423550	OSCILLOSCOPE	MIR	670	2	2	0	100%
1	004463562	VALVE,SAFETY RELIEF	NORIS	670	2	2	0	100%
2	004463562	VALVE,SAFETY RELIEF	MIR	670	1	1	0	100%
3	004510041	CLEVIS,ROD END	NORIS	670	1	1	0	100%
4	004510041	CLEVIS,ROD END	MIR	670	3	3	0	100%
5	004898877	GENERATOR,PULSE	NORIS	670	2	1	1	50%
6	004898877	GENERATOR,PULSE	MIR	670	1	1	0	100%
7	004899110	TEST SET,PRESSURE T	NORIS	670	53	53	0	100%
8	004899110	TEST SET,PRESSURE T	MIR	670	147	147	0	100%
9	004901496	POWER SUPPLY	NORIS	670	2	2	0	100%
0	004901496	POWER SUPPLY	MIR	670	2	2	0	100%
1	005562578	VOLTMETER	NORIS	670	2	1	0	50%
2	005562578	VOLTMETER	MIR	670	2	2	0	100%
3	005568108	TEST SET,SYNCHRO	NORIS	670	1	1	0	100%
4	005568108	TEST SET,SYNCHRO	MIR	670	2	2	0	100%
5	005633650	TENSIOMETER DIAL IN	NORIS	670	36	34	2	94%
6	005633650	TENSIOMETER DIAL IN	MIR	670	8	8	0	100%
7	005653685	TESTER,EXHAUST GAS	NORIS	670	1	1	0	100%
8	005653685	TESTER,EXHAUST GAS	MIR	670	2	2	0	100%
9	005785201	TESTER,SPRING RESIL	NORIS	670	3	2	0	67%
0	005785201	TESTER,SPRING RESIL	MIR	670	14	14	0	100%
1	005889145	TESTER,PRESSURE GAG	NORIS	670	15	15	0	100%
2	005889145	TESTER,PRESSURE GAG	MIR	670	1	1	0	100%
3	006493290	MULTIMETER	NORIS	670	2	2	0	100%
4	006493290	MULTIMETER	MIR	670	2	2	0	100%
5	006845438	METER,AUDIO LEVEL	NORIS	670	8	8	0	100%
6	006845438	METER,AUDIO LEVEL	MIR	670	7	7	0	100%
7	007196095	VALVE,PRESSURE,ANTI	NORIS	670	1	1	0	100%
8	007196095	VALVE,PRESSURE,ANTI	MIR	670	1	0	1	0%
9	007274695	VOLTMETER,ELECTRONI	NORIS	670	4	4	0	100%
0	007274695	VOLTMETER,ELECTRONI	MIR	670	2	2	0	100%
1	007274706	VOLTMETER	NORIS	670	10	9	0	90%
2	007274706	VOLTMETER	MIR	670	11	11	0	100%
3	007581162	GAGE,PRESSURE	NORIS	670	72	72	0	100%
4	007581162	GAGE,PRESSURE	MIR	670	16	16	0	100%
5	007610936	BAG,URINE COLLECTIO	NORIS	670	3	3	0	100%
6	007610936	BAG,URINE COLLECTIO	MIR	670	6	6	0	100%
7	007739762	TEST SET,POWER SUPP	NORIS	670	1	1	0	100%

LINE	NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
708	007739762	TEST SET,POWER SUPP	MIR	670	8	8	0	100%
709	007880311	GENERATOR,PULSE	NORIS	670	1	1	0	100%
710	007880311	GENERATOR,PULSE	MIR	670	1	1	0	100%
711	007886231	TEST SET,INDICATOR	NORIS	670	5	4	1	80%
712	007886231	TEST SET,INDICATOR	MIR	670	1	1	0	100%
713	007901960	CALIPER,MICROMETER,	NORIS	670	10	10	0	100%
714	007901960	CALIPER,MICROMETER,	MIR	670	9	9	0	100%
715	007997616	STROBOSCOPE	NORIS	670	4	4	0	100%
716	007997616	STROBOSCOPE	MIR	670	3	3	0	100%
717	007997813	TESTER,TACHOMETER	NORIS	670	18	18	0	100%
718	007997813	TESTER,TACHOMETER	MIR	670	5	5	0	100%
719	008033399	TEST SET,RADIO	NORIS	670	56	56	0	100%
720	008033399	TEST SET,RADIO	MIR	670	8	8	0	100%
721	008129959	SCALE,WEIGHING	NORIS	670	5	5	0	100%
722	008129959	SCALE,WEIGHING	MIR	670	1	1	0	100%
723	008255119	INDICATOR,DIAL	NORIS	670	1	1	0	100%
724	008255119	INDICATOR,DIAL	MIR	670	2	2	0	100%
725	008398722	VOLTMETER	NORIS	670	9	8	1	89%
726	008398722	VOLTMETER	MIR	670	19	19	0	100%
727	008490663	SWITCH,STEPPING	NORIS	670	1	1	0	100%
728	008490663	SWITCH,STEPPING	MIR	670	1	1	0	100%
729	008518753	SIMULATOR,GYRO AND	NORIS	670	1	1	0	100%
730	008518753	SIMULATOR,GYRO AND	MIR	670	10	10	0	100%
731	008518754	INDICATOR ASSEMBLY,	NORIS	670	2	2	0	100%
732	008518754	INDICATOR ASSEMBLY,	MIR	670	3	3	0	100%
733	008597910		NORIS	670	1	1	0	100%
734	008597910		MIR	670	6	6	0	100%
735	008885119	PREOILER	NORIS	670	44	41	0	93%
736	008885119	PREOILER	MIR	670	21	21	0	100%
737	008913616	TEST SET,ELECTRONIC	NORIS	670	6	6	0	100%
738	008913616	TEST SET,ELECTRONIC	MIR	670	11	11	0	100%
739	009087451	TRAILER,COMPRESSED	NORIS	670	1	1	0	100%
740	009087451	TRAILER,COMPRESSED	MIR	670	9	9	0	100%
741	009173099	TEST SET,RADIO FREQ	NORIS	670	1	1	0	100%
742	009173099	TEST SET,RADIO FREQ	MIR	670	1	1	0	100%
743	009306637	OSCILLOSCOPE	NORIS	670	2	2	0	100%
744	009306637	OSCILLOSCOPE	MIR	670	31	31	0	100%
745	009316793	POWER SUPPLY	NORIS	670	1	1	0	100%
746	009316793	POWER SUPPLY	MIR	670	1	1	0	100%
747	009318361	WRENCH,TORQUE	NORIS	670	32	29	3	91%
748	009318361	WRENCH,TORQUE	MIR	670	1	1	0	100%
749	009336310	TEST STAND,HYDRAULI	NORIS	670	2	2	0	100%
750	009336310	TEST STAND,HYDRAULI	MIR	670	2	2	0	100%
751	009424224		NORIS	670	18	15	3	83%
752	009424224		MIR	670	4	4	0	100%
753	009428283	TEST SET,FLIGHT CON	NORIS	670	2	2	0	100%
754	009428283	TEST SET,FLIGHT CON	MIR	670	2	2	0	100%
755	009428284	TEST SET,FLIGHT CON	NORIS	670	2	2	0	100%

E	NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
6	009428284	TEST SET,FLIGHT CON	MIR	670	4	4	0	100%
7	009445766	CALIBRATION SET,COM	NORIS	670	3	2	0	67%
8	009445766	CALIBRATION SET,COM	MIR	670	15	15	0	100%
9	009480077	TEST SET,TRANSPONDE	NORIS	670	21	21	0	100%
0	009480077	TEST SET,TRANSPONDE	MIR	670	1	1	0	100%
1	009570393	TEST SET,ELECTRICAL	NORIS	670	20	20	0	100%
2	009570393	TEST SET,ELECTRICAL	MIR	670	4	4	0	100%
3	009589155		NORIS	670	2	2	0	100%
4	009589155		MIR	670	1	1	0	100%
5	009623097	TEST SET,FUEL SYSTE	NORIS	670	13	13	0	100%
6	009623097	TEST SET,FUEL SYSTE	MIR	670	91	91	0	100%
7	009629504		NORIS	670	20	20	0	100%
8	009629504		MIR	670	1	1	0	100%
9	009694105	MULTIMETER	NORIS	670	9	8	0	89%
0	009694105	MULTIMETER	MIR	670	5	5	0	100%
1	009734837	FREQUENCY MEASURING	NORIS	670	3	3	0	100%
2	009734837	FREQUENCY MEASURING	MIR	670	7	7	0	100%
3	009923946	VALVE,LINEAR,DIRECT	NORIS	670	3	3	0	100%
4	009923946	VALVE,LINEAR,DIRECT	MIR	670	3	3	0	100%
5	009936371	TRANSISTOR	NORIS	670	1	1	0	100%
6	009936371	TRANSISTOR	MIR	670	1	1	0	100%
7	009950161	VALVE,PNEUMATIC TIR	NORIS	670	1	1	0	100%
8	009950161	VALVE,PNEUMATIC TIR	MIR	670	1	1	0	100%
9	009957716	VOLTMETER	NORIS	670	8	8	0	100%
0	009957716	VOLTMETER	MIR	670	5	5	0	100%
1	009974269		NORIS	670	38	35	3	92%
2	009974269		MIR	670	16	16	0	100%
3	009986084	MULTIMETER	NORIS	670	2	1	1	50%
4	009986084	MULTIMETER	MIR	670	2	2	0	100%
5	009986303	TEST SET,CONTROL	NORIS	670	1	1	0	100%
6	009986303	TEST SET,CONTROL	MIR	670	2	2	0	100%
7	009996832	TEST SET,LINE MAINT	NORIS	670	5	5	0	100%
8	009996832	TEST SET,LINE MAINT	MIR	670	3	3	0	100%
9	010087938	CHARGER,BATTERY	NORIS	670	3	2	0	67%
0	010087938	CHARGER,BATTERY	MIR	670	3	3	0	100%
1	010100088	MULTIMETER	NORIS	670	4	4	0	100%
2	010100088	MULTIMETER	MIR	670	9	9	0	100%
3	010106783	PLUG-IN UNIT,ELECTR	NORIS	670	2	2	0	100%
4	010106783	PLUG-IN UNIT,ELECTR	MIR	670	1	1	0	100%
5	010139900	TEST SET,RADIO	NORIS	670	12	10	1	83%
6	010139900	TEST SET,RADIO	MIR	670	3	3	0	100%
7	010162699	INDICATOR,DIGITAL D	NORIS	670	11	11	0	100%
8	010162699	INDICATOR,DIGITAL D	MIR	670	6	6	0	100%
9	010192228	VOLTMETER	NORIS	670	1	1	0	100%
0	010192228	VOLTMETER	MIR	670	4	4	0	100%
1	010210236	MULTIMETER	NORIS	670	103	98	0	95%
2	010210236	MULTIMETER	MIR	670	81	81	0	100%
3	010245003	LEAD,TEST	NORIS	670	2	2	0	100%

LINE	NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
804	010245003	LEAD,TEST	MIR	670	2	2	0	100%
805	010258123	TEST SET,RADIO	NORIS	670	5	4	0	80%
806	010258123	TEST SET,RADIO	MIR	670	8	8	0	100%
807	010304113	PLUG-IN,ELECTRONIC	NORIS	670	7	7	0	100%
808	010304113	PLUG-IN,ELECTRONIC	MIR	670	3	3	0	100%
809	010311306	SIGNAL GENERATOR-DE	NORIS	670	2	2	0	100%
810	010311306	SIGNAL GENERATOR-DE	MIR	670	7	7	0	100%
811	010326914	OSCILLOSCOPE	NORIS	670	11	11	0	100%
812	010326914	OSCILLOSCOPE	MIR	670	12	12	0	100%
813	010335835	METER,MODULATION	NORIS	670	8	6	0	75%
814	010335835	METER,MODULATION	MIR	670	1	1	0	100%
815	010345033	WRENCH,TORQUE	NORIS	670	12	11	1	92%
816	010345033	WRENCH,TORQUE	MIR	670	2	2	0	100%
817	010368271	MAINFRAME,OSCILLOSC	NORIS	670	3	3	0	100%
818	010368271	MAINFRAME,OSCILLOSC	MIR	670	1	1	0	100%
819	010374412	TESTER,CABLE,TIME D	NORIS	670	62	57	1	92%
820	010374412	TESTER,CABLE,TIME D	MIR	670	64	64	0	100%
821	010406118	CHARGER,BATTERY	NORIS	670	8	8	0	100%
822	010406118	CHARGER,BATTERY	MIR	670	1	1	0	100%
823	010420983	WRENCH,TORQUE	NORIS	670	1	0	1	0%
824	010420983	WRENCH,TORQUE	MIR	670	2	2	0	100%
825	010450555	WRENCH,TORQUE	NORIS	670	2	2	0	100%
826	010450555	WRENCH,TORQUE	MIR	670	1	1	0	100%
827	010520915	MULTIMETER	NORIS	670	1	1	0	100%
828	010520915	MULTIMETER	MIR	670	2	2	0	100%
829	010592703	TEST SET,SYNCHROPHA	NORIS	670	2	2	0	100%
830	010592703	TEST SET,SYNCHROPHA	MIR	670	17	17	0	100%
831	010667885	WRENCH,TORQUE	NORIS	670	50	46	4	92%
832	010667885	WRENCH,TORQUE	MIR	670	49	49	0	100%
833	010695598	POWER SUPPLY	NORIS	670	3	3	0	100%
834	010695598	POWER SUPPLY	MIR	670	1	1	0	100%
835	010703507	SEAL,CONICAL,FLARED	NORIS	670	2	1	0	50%
836	010703507	SEAL,CONICAL,FLARED	MIR	670	1	1	0	100%
837	010742550	ANALYZER,SPECTRUM	NORIS	670	2	2	0	100%
838	010742550	ANALYZER,SPECTRUM	MIR	670	1	1	0	100%
839	010749102	STATOR,ENGINE GENER	NORIS	670	12	11	1	92%
840	010749102	STATOR,ENGINE GENER	MIR	670	5	5	0	100%
841	010824330	SWITCH,PUSH	NORIS	670	3	2	1	67%
842	010824330	SWITCH,PUSH	MIR	670	10	10	0	100%
843	010849665	PUMP UNIT,BREATHABL	NORIS	670	11	11	0	100%
844	010849665	PUMP UNIT,BREATHABL	MIR	670	18	18	0	100%
845	010904458	MULTIMETER,DIGITAL	NORIS	670	29	28	0	97%
846	010904458	MULTIMETER,DIGITAL	MIR	670	12	12	0	100%
847	010904459	MULTIMETER,DIGITAL	NORIS	670	18	18	0	100%
848	010904459	MULTIMETER,DIGITAL	MIR	670	14	14	0	100%
849	010923278	WRENCH,TORQUE	NORIS	670	23	20	3	87%
850	010923278	WRENCH,TORQUE	MIR	670	5	5	0	100%
851	010937831	METER,MODULATION	NORIS	670	1	1	0	100%

NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
010937831	METER,MODULATION	MIR	670	3	3	0	100%
010947716	GENERATOR,FUNCTION	NORIS	670	4	4	0	100%
010947716	GENERATOR,FUNCTION	MIR	670	4	4	0	100%
010960426	VOLTMETER	NORIS	670	1	0	0	0%
010960426	VOLTMETER	MIR	670	2	2	0	100%
010982818	VOLTMETER	NORIS	670	3	3	0	100%
010982818	VOLTMETER	MIR	670	2	2	0	100%
011092353	MOTOR DRIVE,CAMERA	NORIS	670	16	16	0	100%
011092353	MOTOR DRIVE,CAMERA	MIR	670	1	1	0	100%
011100225	CALIPER,SLIDE,DIAME	NORIS	670	23	19	2	83%
011100225	CALIPER,SLIDE,DIAME	MIR	670	7	7	0	100%
011104910	ALARM,GAS,AUTOMATIC	NORIS	670	12	12	0	100%
011104910	ALARM,GAS,AUTOMATIC	MIR	670	16	16	0	100%
011178808	OHMMETER	NORIS	670	8	3	5	38%
011178808	OHMMETER	MIR	670	4	4	0	100%
011183679	WRENCH,TORQUE	NORIS	670	75	72	3	96%
011183679	WRENCH,TORQUE	MIR	670	22	22	0	100%
011210570	TENSIOMETER,DIAL IN	NORIS	670	1	1	0	100%
011210570	TENSIOMETER,DIAL IN	MIR	670	1	1	0	100%
011253775	METER,IMPEDANCE	NORIS	670	1	1	0	100%
011253775	METER,IMPEDANCE	MIR	670	1	1	0	100%
011313883	PROBE-LEAD ASSEMBLY	NORIS	670	3	3	0	100%
011313883	PROBE-LEAD ASSEMBLY	MIR	670	3	3	0	100%
011349920	GENERATOR,SWEEP	NORIS	670	2	2	0	100%
011349920	GENERATOR,SWEEP	MIR	670	4	4	0	100%
011410974	TEST SET,PRESSURE A	NORIS	670	4	4	0	100%
011410974	TEST SET,PRESSURE A	MIR	670	3	3	0	100%
011506854	TEST SET,RADIO	NORIS	670	1	1	0	100%
011506854	TEST SET,RADIO	MIR	670	3	3	0	100%
011526705	TEST SET,TRANSPONDE	NORIS	670	13	9	0	69%
011526705	TEST SET,TRANSPONDE	MIR	670	26	20	6	77%
011541347	PROD TEST	NORIS	670	2	2	0	100%
011541347	PROD TEST	MIR	670	1	1	0	100%
011649372	PLUG-IN UNIT,EQUIPM	NORIS	670	1	1	0	100%
011649372	PLUG-IN UNIT,EQUIPM	MIR	670	1	1	0	100%
011650437	TEST SET,RADIO	NORIS	670	1	1	0	100%
011650437	TEST SET,RADIO	MIR	670	5	5	0	100%
011726119	OSCILLOSCOPE	NORIS	670	7	7	0	100%
011726119	OSCILLOSCOPE	MIR	670	10	10	0	100%
011792809	VOLTMETER,DIGITAL	NORIS	670	1	1	0	100%
011792809	VOLTMETER,DIGITAL	MIR	670	2	2	0	100%
011813155	LUMBAR PUNCTURE KIT	NORIS	670	1	1	0	100%
011813155	LUMBAR PUNCTURE KIT	MIR	670	3	3	0	100%
011857360	WHEEL,ABRASIVE	NORIS	670	2	2	0	100%
011857360	WHEEL,ABRASIVE	MIR	670	4	4	0	100%
012023543	WRENCH,TORQUE	NORIS	670	1	1	0	100%
012023543	WRENCH,TORQUE	MIR	670	1	1	0	100%
012044292	TEST SET,ORGANIZATI	NORIS	670	23	23	0	100%

LINE	NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
900	012044292	TEST SET,ORGANIZATI	MIR	670	10	10	0	100%
901	012065809	CONTROLLER	NORIS	670	1	1	0	100%
902	012065809	CONTROLLER	MIR	670	1	1	0	100%
903	012139354	MULTIMETER	NORIS	670	42	36	2	86%
904	012139354	MULTIMETER	MIR	670	104	104	0	100%
905	012155587	TEST SET,BOMB RACK	NORIS	670	1	0	0	0%
906	012155587	TEST SET,BOMB RACK	MIR	670	1	1	0	100%
907	012204627	ANALYZER,BATTERY	NORIS	670	1	1	0	100%
908	012204627	ANALYZER,BATTERY	MIR	670	1	1	0	100%
909	012204985	PLUG-IN UNIT,ELECTR	NORIS	670	10	10	0	100%
910	012204985	PLUG-IN UNIT,ELECTR	MIR	670	10	10	0	100%
911	012204986	PLUG-IN UNIT,ELECTR	NORIS	670	5	5	0	100%
912	012204986	PLUG-IN UNIT,ELECTR	MIR	670	5	5	0	100%
913	012221565	GENERATOR,SIGNAL	NORIS	670	1	1	0	100%
914	012221565	GENERATOR,SIGNAL	MIR	670	2	2	0	100%
915	012300192	WRENCH,TORQUE	NORIS	670	1	1	0	100%
916	012300192	WRENCH,TORQUE	MIR	670	1	1	0	100%
917	012348248	MULTIMETER	NORIS	670	11	11	0	100%
918	012348248	MULTIMETER	MIR	670	9	9	0	100%
919	012429970		NORIS	670	1	0	1	0%
920	012429970		MIR	670	1	1	0	100%
921	012489079	ANALYZER,SPECTRUM	NORIS	670	33	32	0	97%
922	012489079	ANALYZER,SPECTRUM	MIR	670	11	11	0	100%
923	012504575	ADAPTER,SPECIAL	NORIS	670	3	2	1	67%
924	012504575	ADAPTER,SPECIAL	MIR	670	7	7	0	100%
925	012553189	COUNTER,ELECTRONIC,	NORIS	670	1	1	0	100%
926	012553189	COUNTER,ELECTRONIC,	MIR	670	1	1	0	100%
927	012561639	MAGAZINE,FILM	NORIS	670	12	8	4	67%
928	012561639	MAGAZINE,FILM	MIR	670	10	10	0	100%
929	012606908	OSCILLOSCOPE	NORIS	670	1	1	0	100%
930	012606908	OSCILLOSCOPE	MIR	670	4	4	0	100%
931	012614605	OSCILLOSCOPE	NORIS	670	4	4	0	100%
932	012614605	OSCILLOSCOPE	MIR	670	10	10	0	100%
933	012639094		NORIS	670	1	1	0	100%
934	012639094		MIR	670	1	1	0	100%
935	012647047	MULTIMETER	NORIS	670	1	0	0	0%
936	012647047	MULTIMETER	MIR	670	1	1	0	100%
937	012732542		NORIS	670	3	3	0	100%
938	012732542		MIR	670	5	5	0	100%
939	012743412	DRIVER,TORQUE	NORIS	670	1	1	0	100%
940	012743412	DRIVER,TORQUE	MIR	670	4	3	0	75%
941	012867079	GUN,HEATER,NITROGEN	NORIS	670	3	3	0	100%
942	012867079	GUN,HEATER,NITROGEN	MIR	670	1	1	0	100%
943	012908871	RIBBON,COMPUTING MA	NORIS	670	1	1	0	100%
944	012908871	RIBBON,COMPUTING MA	MIR	670	3	3	0	100%
945	012926225		NORIS	670	6	5	1	83%
946	012926225		MIR	670	2	2	0	100%
947	012952642	TRANSFER SCREEN,VID	NORIS	670	5	4	1	80%

E	NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
8	012952642	TRANSFER SCREEN,VID	MIR	670	1	1	0	100%
9	012998229	PACKING,PREFORMED	NORIS	670	1	1	0	100%
0	012998229	PACKING,PREFORMED	MIR	670	1	1	0	100%
1	013052027	STUD,PLAIN	NORIS	670	1	1	0	100%
2	013052027	STUD,PLAIN	MIR	670	2	2	0	100%
3	013101124	VALVE,GLOBE	NORIS	670	3	2	1	67%
4	013101124	VALVE,GLOBE	MIR	670	4	4	0	100%
5	013143678	ADAPTER,CABIN,CARGO	NORIS	670	1	1	0	100%
6	013143678	ADAPTER,CABIN,CARGO	MIR	670	1	1	0	100%
7	013161835	ENGINE,TEST SET	NORIS	670	15	7	0	47%
8	013161835	ENGINE,TEST SET	MIR	670	52	52	0	100%
9	013252584	BRIDGE,IMPEDANCE	NORIS	670	1	1	0	100%
0	013252584	BRIDGE,IMPEDANCE	MIR	670	2	2	0	100%
1	013252900	KNOB	NORIS	670	44	41	2	93%
2	013252900	KNOB	MIR	670	13	13	0	100%
3	013253133	CHEMICAL LIGHT STRA	NORIS	670	1	1	0	100%
4	013253133	CHEMICAL LIGHT STRA	MIR	670	9	9	0	100%
5	013284955	TEST SET SUBASSEMBL	NORIS	670	13	13	0	100%
6	013284955	TEST SET SUBASSEMBL	MIR	670	2	2	0	100%
7	013288700	WATTMETER	NORIS	670	1	1	0	100%
8	013288700	WATTMETER	MIR	670	3	3	0	100%
9	143291613		NORIS	670	3	3	0	100%
0	143291613		MIR	670	1	1	0	100%
		NORTH ISLAND TOTAL:			1743	1656	46	95%
		MIRAMAR TOTAL:			2080	2072	7	100%
		SUM TOTAL:			3997	3872	74	97%

K CENTER 69A

1	001623720	MODULE,RELAY ASSEMB	NORIS	69A	1	1	0	100%
2	001623720	MODULE,RELAY ASSEMB	MIR	69A	4	4	0	100%
3	010785643	POWER SUPPLY	NORIS	05A	5	0	5	0%
4	010785643	POWER SUPPLY	MIR	69A	11	2	9	18%
5	012225158	DISK DRIVE	NORIS	69A	2	0	2	0%
6	012225158	DISK DRIVE	MIR	69A	1	1	0	100%
		NORTH ISLAND TOTAL:			8	1	7	13%
		MIRAMAR TOTAL:			16	7	9	44%
		SUM TOTAL:			24	8	16	33%

K CENTER 81A

7	001094606	ACTUATOR,PARACHUTE	NORIS	81A	10	0	10	0%
8	001094606	ACTUATOR,PARACHUTE	MIR	81A	2	0	2	0%
9	010762717	CANOPY,PERSONNEL PA	NORIS	81A	2	0	2	0%

LINE	NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
980	010762717	CANOPY,PERSONNEL PA	MIR	81A	5	1	4	20%
981	010776871	CONTAINER ASSEMBLY	NORIS	81A	6	0	6	0%
982	010776871	CONTAINER ASSEMBLY	MIR	81A	4	0	4	0%
983	010900051	GUN ASSEMBLY,SPREAD	NORIS	81A	10	0	10	0%
984	010900051	GUN ASSEMBLY,SPREAD	MIR	81A	9	0	9	0%
985	011303120	HARNESS,PERSONNEL P	NORIS	81A	1	0	1	0%
986	011303120	HARNESS,PERSONNEL P	MIR	81A	1	1	0	100%
987	012118544	SPREADING GUN ASSEM	NORIS	81A	9	0	9	0%
988	012118544	SPREADING GUN ASSEM	MIR	81A	2	0	2	0%
		NORTH ISLAND TOTAL:			38	0	38	0%
		MIRAMAR TOTAL:			23	3	20	13%
		SUM TOTAL:			61	3	58	5%
WORK CENTER 81B								
989	001186122	LIFE RAFT,INFLATABL	NORIS	81B	22	3	19	14%
990	001186122	LIFE RAFT,INFLATABL	MIR	81B	1	0	1	0%
991	001241558	SURVIVAL KIT CONTAI	NORIS	81B	21	20	1	95%
992	001241558	SURVIVAL KIT CONTAI	MIR	81B	4	4	0	100%
993	010527050	SURVIVAL KIT CONTAI	NORIS	81B	1	1	0	100%
994	010527050	SURVIVAL KIT CONTAI	MIR	81B	6	6	0	100%
995	010527051	SURVIVAL KIT CONTAI	NORIS	81B	6	6	0	100%
996	010527051	SURVIVAL KIT CONTAI	MIR	81B	6	5	1	83%
997	010600963	SURVIVAL KIT CONTAI	NORIS	81B	2	2	0	100%
998	010600963	SURVIVAL KIT CONTAI	MIR	81B	2	2	0	100%
999	010743408	LIFE RAFT,INFLATABL	NORIS	81B	14	9	5	64%
1000	010743408	LIFE RAFT,INFLATABL	MIR	81B	3	3	0	100%
1001	011204894	LIFE PRESERVER,YOKE	NORIS	81B	263	223	40	85%
1002	011204894	LIFE PRESERVER,YOKE	MIR	81B	168	145	17	86%
1003	011384329	LIFE PRESERVER,YOKE	NORIS	81B	66	64	2	97%
1004	011384329	LIFE PRESERVER,YOKE	MIR	81B	354	259	70	73%
1005	011769158	COVERALLS,FLYERS,AN	NORIS	81B	8	4	4	50%
1006	011769158	COVERALLS,FLYERS,AN	MIR	81B	65	58	7	89%
1007	012434523	BAG,EQUIPMENT,RESCU	NORIS	81B	1	0	1	0%
1008	012434523	BAG,EQUIPMENT,RESCU	MIR	81B	1	1	0	100%
		NORTH ISLAND TOTAL:			407	332	75	82%
		MIRAMAR TOTAL:			607	484	86	80%
		SUM TOTAL:			1014	816	161	80%
WORK CENTER 81C								
1009	000555105	CYLINDER ASSEMBLY	NORIS	81C	4	1	3	25%
1010	000555105	CYLINDER ASSEMBLY	MIR	81C	1	0	1	0%
1011	001678388	CONVERTER,LIQUID OX	NORIS	81C	4	3	1	75%

E	NIIN	NOMEN	AIMD	WC	PROC	RFI	BCM	RFI %
2	001678388	CONVERTER,LIQUID OX	MIR	81C	15	11	4	73%
3	002527796	REGULATOR,OXYGEN,DI	NORIS	81C	1	0	1	0%
4	002527796	REGULATOR,OXYGEN,DI	MIR	81C	1	1	0	100%
5	008045803	CONVERTER,LIQUID OX	NORIS	81C	106	69	37	65%
6	008045803	CONVERTER,LIQUID OX	MIR	81C	339	281	58	83%
7	009154603	HOSE,OXYGEN	NORIS	81C	7	2	5	29%
8	009154603	HOSE,OXYGEN	MIR	81C	8	2	6	25%
9	009271652	HOSE ASSY,SURVIVAL	NORIS	81C	37	9	28	24%
0	009271652	HOSE ASSY,SURVIVAL	MIR	81C	29	16	13	55%
1	010144117	REGULATOR,OXYGEN,DE	NORIS	81C	2	2	0	100%
2	010144117	REGULATOR,OXYGEN,DE	MIR	81C	12	12	0	100%
3	010605027	CYLINDER ASSEMBLY	NORIS	81C	3	1	2	33%
4	010605027	CYLINDER ASSEMBLY	MIR	81C	11	0	11	0%
5	011018827	REGULATOR,OXYGEN,TR	NORIS	81C	5	4	1	80%
6	011018827	REGULATOR,OXYGEN,TR	MIR	05A	6	0	6	0%
7	011794064	CONVERTER,LIQUID OX	NORIS	81C	13	12	1	92%
8	011794064	CONVERTER,LIQUID OX	MIR	81C	60	54	6	90%
9	012408316	EGRESS DEVICE,VEST	NORIS	81C	477	435	42	91%
0	012408316	EGRESS DEVICE,VEST	MIR	81C	3	2	0	67%
		NORTH ISLAND TOTAL:			659	538	121	82%
		MIRAMAR TOTAL:			485	379	101	78%
		SUM TOTAL:			1144	917	222	80%

K CENTER 940

1	000916352	GENERATOR,ENGINE AC	NORIS	940	5	2	3	40%
2	000916352	GENERATOR,ENGINE AC	MIR	05A	5	0	5	0%
3	002319689	RELAY,ELECTRICAL	NORIS	940	1	1	0	100%
4	002319689	RELAY,ELECTRICAL	MIR	05A	1	0	1	0%
5	002319690	RELAY,ELECTROMAGNET	NORIS	940	3	3	0	100%
6	002319690	RELAY,ELECTROMAGNET	MIR	05A	1	0	1	0%
7	004779242	ACTUATOR,GOVERNOR	NORIS	940	8	4	4	50%
8	004779242	ACTUATOR,GOVERNOR	MIR	05A	6	0	6	0%
9	005081807	RELAY,ELECTROMAGNET	NORIS	940	5	3	2	60%
0	005081807	RELAY,ELECTROMAGNET	MIR	05A	3	0	3	0%
1	007162024	VALVE	NORIS	940	1	1	0	100%
2	007162024	VALVE	MIR	05A	7	0	7	0%
		NORTH ISLAND TOTAL:			23	14	9	61%
		MIRAMAR TOTAL:			23	0	23	0%
		SUM TOTAL:			46	14	32	30%

LIST OF REFERENCES

1. The Monterey Herald newspaper, April 27, 1991, *Powell says U.S. must be 'vicious' in closures.*

2. Department of the Navy, Chief of Naval Operations, OPNAVINST 4790.2E, *Naval Aviation Maintenance Program*, Volume 1.

3. Blanchard, B.S., *Logistics Engineering and Management*, Prentice-Hall, 1986.

4. Department of the Navy, Chief of Naval Operations, OPNAVINST 4790.2E, *Naval Aviation Maintenance Program*, Volume 3.

5. Mr. Richard Wentzell, COMNAVAIRPAC Comptroller Aircraft Operations Maintenance Project Manager. Telephone interview with LT Ainsworth, October 10, 1991.

6. Mr. Calvin Chesser, Budget Analyst, Naval Military Personnel Command, Code 731. Telephone interview with LT Ainsworth, October 7, 1991.

7. Mr. Joe O'Hagan, Team Leader, CINCPAC Management Analysis Team. Telephone interview with LT Ainsworth, October 7, 1991.

8. CDR O'Day, COMNAVAIRPAC Force Personnel Officer, Code 60. Telephone conversation with LT Ainsworth, October 7, 1991.

9. Busch, Andrew E., *An Assessment of Cost Factors for the Alternatives to Intermediate Maintenance Concept for the Tactical Air Command*, Masters Thesis, Air Force Institute of Technology, Dayton, Ohio, September 1990.

10. Ballou, Ronald H., *Business Logistics Management Planning and Control*, Second Edition, Prentice-Hall Inc.,1985.

11. Hunt, Ronald S., *An Assessment of Centralized Intermediate Maintenance Upon Combat Capability*, Masters Thesis, Air Force Institute of Technology, September, 1988.

12. Bundy, Brian D., and Arnold, Edward, *Basic Queuing Theory*, Prentice-Hall, 1986.

13. Winston, Wayne, "Optimal Dynamic Rules for Assigning Customers to Servers in a Heterogeneous Queuing System," *Naval Research Logistics Quarterly*, Volume 24, Number 2, June 1977.

14. Wolff, Ronald W., *Stochastic Modeling and the Theory of Queues*, Prentice-Hall, Inc., 1989.

15. Smith, D.R., and Whitt, W., "Resource Sharing for Efficiency in Traffic Systems," *Bell Systems Technical Journal*, 1981.

16. Jones, Michael T., O'Berski, Arlene M., and Gail, Tom, "Quickening the Queue in Grocery Stores," *Interfaces*, v.10, June 1980.

17. Boyer, T.B., *Analysis of the Production Planning and Inventory Control System used by NADEP, North Island for the Repair of the T-64 Series Engine*, Masters Thesis, Naval Postgraduate School, Monterey, California, June 1988.

18. Public Works Center San Diego, PWCNOTE 7030, *FY 1992 Stabilized Rates for Utilities, Other Services, Direct Labor and Transportation*, dated October 8, 1991.

19. Mr. Dave Brown, Transportation Specialist, Public Works Department, NAS Miramar. Telephone conversation with LCDR Wirwille, November 25, 1991.

20. U.S. General Services Administration, *Federal Blue Collar Pay Schedule, 1991 Rates*, dated March 10, 1991.

21. Mr. Henry Maines, Deputy Aviation Support Division Officer, NAS Miramar Supply Department. Telephone conversation with LT Ainsworth, November 18, 1991.

22. Department of the Navy, Navy Military Personnel Command, NAVPERS 18068F, *MANUAL OF NAVY ENLISTED MANPOWER AND PERSONNEL CLASSIFICATIONS AND OCCUPATIONAL STANDARDS, VOLUME II, NAVY ENLISTED CLASSIFICATIONS (NECs)*, July 1991.

23. Mr. D. Wong, Naval Aviation Systems Command, Support Equipment Division, AIR 552, Avionics System Support Branch. Telephone conversation with LCDR Wirwille, November 14, 1991.

24. Merideth, Mark S., *The Consolidated Automated Support System (CASS), A Comparative Evaluation*, Masters Thesis, Naval Postgraduate School, Monterey, California, June 1990.

25. Ms. Mary Anne Martin, Naval Aviation Systems Command, CASS Program Manager's Office, PMA 260. Telephone conversation with LCDR Wirwille, November 21, 1991.

26. Mr. Don Byington, Supervisor, Special Projects Branch, NAS North Island Supply Department. Telephone conversation with LT Ainsworth, October 7, 1991.

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